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Mchome, Zaina

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An Ethnography of Child Growth

**Socio-cultural context and meanings attached to child growth
in Southeastern Tanzania**

Zaina Shabani Mchome

An Ethnography of Child Growth

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An Ethnography of Child Growth

Socio-cultural context and meanings attached to child growth in
 Southeastern Tanzania.

PhD thesis

to obtain the degree of Doctor at the University of
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 on the authority of the
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Thursday 27 May 2021 at 14.30 hours

by

Zaina Shabani Mchome

born on 28 July 1980 in
 Same, Kilimanjaro
 Tanzania

Supervisors

Prof. H.H Haisma

Prof. A. Bailey

Reading committee

Prof. J. Kinabo

Prof. R. Reis

Prof. J. Stekelenburg

To
Precious, Patricia and Prince,
My little angels, you mean the world to me.

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Chapter 4

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Chapter 5

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Chapter 6

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Chapter 7

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Chapter 1

Introduction

1.1 Global overview of childhood malnutrition

According to a recent report by UNICEF / WHO / The World Bank [1], childhood malnutrition remains a global health concern, and continues to threaten the lives of the majority of young children. These ongoing trends reduce the chances that the targets set by the World Health Assembly for 2025 and the Sustainable Development Goals set for 2030 will be achieved. Globally, approximately 149 million children (21.9%) suffer from stunting (ibid), making stunting the most common form of malnutrition among children in this age group [1,2]. It has been estimated that in 2018, over 49 million children (7.3%) under age five were wasted, and nearly 17 million were severely wasted. It has also been reported that in 2018, there were more than 40 million (5.9%) overweight children globally, up from 30 million since 2000[1]; and that 27% of all stunted children, 17% of all wasted children, and 36% of all overweight children were living in low-income countries (ibid). Africa and Asia continue to have the largest shares of children with all forms of malnutrition [1,2]. In 2018, more than half of all stunted children under age five were living in Asia, and more than one-third were living in Africa. Similarly, more than two-thirds of all wasted children under age five were living in Asia and more than one-quarter were living in Africa; and almost half of all overweight children under age five were living in Asia and one-quarter were living in Africa [1].

Sub-Saharan Africa was no exception: in SSA in 2018, 33% of under-five children were stunted, 2.3% were wasted, and 3.5% were overweight [1]. In Eastern Africa in 2018, 35.2% of under-five children were stunted, 1.6% were wasted, and 4.7% were overweight (Ibid). A trend analysis for the African region in general, and for East Africa in particular, projected that the number of stunted children under age five would increase until 2020 [2]. It has been reported that preventable or treatable diseases (including malnutrition) account for most of the deaths of under-five children [3]. An estimation of the deaths of under-five children has shown that in 2015, about 2.9 million children in this age group died in Sub-Saharan Africa [4]. It has been projected that if the 2015 under-five mortality trends continue, around six in 10 global under-five deaths will occur in Sub-Saharan Africa in 2030 [5].

1.2 Childhood malnutrition trends in Tanzania

Tanzania has made substantial progress in reducing child undernutrition over time. The evidence indicates that the prevalence of stunting and underweight has been decreasing steadily in the country since 1999. For instance, between 1999 and 2016 in Tanzania, child underweight fell from 29% to 14%, and child stunting fell from 44% to 34% [6]. In contrast, the prevalence of wasting remained virtually unchanged (i.e., 5%) between 1999 and 2016 (ibid). Despite the noted progress, millions of under-five children in the country are still reported to suffer from different forms of malnutrition, including low birth weight, stunting, overweight, underweight, wasting, vitamin A deficiency, iodine deficiency disorders, and anemia [6]. Additionally, Tanzania is experiencing the double burden of malnutrition[6,7], with 28% of women and 4% of under-five children suffering from overweight and obesity [6]. The latest statistics indicate that the prevalence of chronic malnutrition or stunting remains high, at 31.8% [7], according to the new 2018 UNICEF-WHO classification [8]. In other words, approximately 3 million children under five years of age suffered from chronic malnutrition (stunting or low height for age) in Tanzania in 2018 [7]. Among children in Tanzania, stunting increases markedly with age, affecting 40% or more of children between 18 and 47 months of age [6]. The number of stunted children is reported to increase due to high population growth [7], among others factors. While the current

overweight rate (2.8%) is significantly lower than that of 2014 i.e. 4.5% [9], the current prevalence of underweight (15%) is significantly higher than in 2014 (13.4%) [7]. The prevalence of Global Acute Malnutrition (GAM) among children aged 0-59 months decreased from 5% in 2015 [6], to 3.5% in 2018 [7].

Within the country, there is considerable variation in stunting prevalence between rural and urban settings, between zones, and between regions [6,7]. It has been reported that the stunting prevalence is higher in rural communities (39%) than in urban communities (30%) [6,9], and is very high in the Southern Highlands (45%) and the South West Highlands (43%) [6]. In three regions, more than half of children in 2016 were chronically malnourished: Rukwa (56%), Njombe (49%), and Ruvuma (44%) (ibid). The recent statistics show that the level of stunting is “very high” in 15 regions out of 26, with six regions having a stunting prevalence above 40% [7]. In contrast to global trends, the burden of chronic malnutrition in Tanzania remains persistently elevated in high food-producing regions; i.e., “food basket regions” [6,7]. This suggests that factors beyond food availability are relevant for childhood malnutrition in the country. Given the nutritional trends in the country, the recent projections indicate that Tanzania is unlikely to meet the government’s own target of reducing the stunting rate to 28% by 2021, nor the World Health Assembly’s 2025 target. It has been reported that the rate of stunting reduction accelerated slightly from 1.36% in 2012 to 1.62% in 2016. But even if this pace is maintained, more than 3.5 million children are projected to be stunted in 2025 [10]. This level is higher than the WHA target, and by extension, the principal indicator for Sustainable Development Goal 2 (ibid).

Research on child growth in Tanzania has mainly focused on determinants of childhood malnutrition, which is reasonable given the high prevalence of malnutrition in under-five children and its major contribution to child morbidity and mortality. For example, the evidence generated from studies in Tanzania suggests that poor growth is more prevalent in the children of women in polygamous marriages [11,12], and particularly among the children of first and second wives [12]. Among the significant risk factors for undernutrition, and particularly for stunting, in under-five children that have been identified are women’s involvement with farm work [11,13,14], low maternal education and low infant birth weight [6,15–17]. Other factors include the household’s characteristics and the family’s economic status [6,18], child age and breastfeeding [16,19], male sex [6,7,19], inadequate infant feeding practices [13], and access to an adequate water source [17,19].

Despite the centrality of the socio-cultural context in shaping child growth in Tanzania, caregivers’ voices and experiences of child growth have been less documented, and the implications of their cultural perspectives on child growth remain largely unexamined. Specifically, little is known about caregivers’ conceptualizations of ideal / poor growth, and the criteria they use to assess child growth in their local setting. Additionally, little attention has been paid to how caregivers ascertain poor growth in their children, and what their beliefs are about the etiology of poor child growth. It has, however, been shown that caregivers’ concepts of what constitutes normal or poor child growth and development are embedded in their own cultural framework [20], and that this framework profoundly shapes caregivers’ childrearing practices. Furthermore, in most existing studies on this topic, the context of an individual child’s cultural and social conditions is given less attention when examining how and why children grow the way they do. A notable exception is a

qualitative study by Howard [21] conducted among the Chagga, which provided important insights into the “who” and “why” of childhood malnutrition in Tanzania. Health care providers would be in a better position to encourage growth and discourage malnutrition in children if they understood caregivers’ perceptions of healthy / poor child growth.

Following the theoretical framework presented by Haisma et al. [22] for a capability approach to child growth, the current study is based on the belief that child growth is a socio-cultural construct [23], as children live their lives in parental homes with varying conditions [24], which, in turn, shape their growth in different ways. Collecting information about the socio-cultural characteristics of an individual child, of her/his caregivers, or of her/his community would not only enhance health workers’ ability to provide appropriate advice to mothers; it could also inform policy-making processes aimed at allocating resources more equitably, and at reducing inequalities [25].

1.3 The development of global indicators for child growth monitoring

Growth monitoring has been an important practice used in assessing and tracking the health and nutritional status of under-five children. It is a viable activity that enables health professionals to identify at-risk children in a timely manner, and to appropriately intervene with growth-related problems [26]. The development of indicators for assessing child growth dates back to the late 1970s, when the World Health Organization (WHO) officially introduced growth charts designed to be widely used throughout the world for assessing the growth of young children [27]. Initially, the growth charts intended for international use were adopted from the charts based on data collected among babies who were fed infant formula in the United States [28]. Studies conducted through the 1980s uncovered a significant mismatch between the international reference and the growth patterns of infants fed according to current recommendations¹ [27]. These studies showed that after the first three months of life, formula-fed babies showed increased growth when compared to babies who were exclusively breastfed [28]. The publication of these findings raised considerable concerns that they could cause health workers to erroneously diagnose growth faltering, and to advise mothers of exclusively breastfed babies who were healthy and growing well to introduce early artificial feeding [28]. Such advice was considered particularly dangerous for mothers and babies living in conditions of poor hygiene and sanitation, as was still the case in many developing countries [28].

In order to address these problems, the WHO proposed the development of a new growth curve to replace the NCHS-WHO reference. For that purpose, the WHO conducted a Multicenter Growth Reference Study (MGRS) between 1997 and 2003 in six countries: namely, Brazil, Ghana, India, Norway, Oman, and the U.S. [29]. Only children with high socioeconomic status were included in this study, based on the assumption that these children were living under circumstances that would generate optimal growth. A further criterion for inclusion in the study was that the children were fed according to WHO standards (ibid). Additionally, the mothers of the children under study had to be engaged in health-promoting practices, including breastfeeding

¹ In 1979, the WHO and UNICEF recommended that all infants be exclusively breastfed for 4-6 months, and that breastfeeding with appropriate complementary feeding be continued at least until children reached 24 months of age (WHO, 1998).

exclusively for the first six months of the child's life, and not smoking [29,30]. Based on that sample, the MGRS study showed that until the age of five, the growth patterns were very similar between the countries [29]. In other words, no variations were found in the growth patterns of children of different races until that age. In 2006, the WHO released normative growth standards designed to be used in assessing the growth of children across countries, irrespective of their ethnicity, socioeconomic status, and type of feeding. Unlike the former NCHS-WHO reference, the new growth charts were intended to be prescriptive in nature [28,31,32]. Later indicators for motor development (milestones) were added to the physical anthropometric indicators² in assessing the growth of young children.

Since its inception in the late 1970s, child growth monitoring (CGM) has been incorporated into the health policies of most countries around the world, including Tanzania, and is reflected in child care services [30]. It has become the norm for health workers to evaluate the growth of children by focusing on the information about changes in weight and height [33]. Although CGM has been practiced for many years, its effectiveness has been debated. While some studies that have examined the impact of CGM have found that it has contributed significantly to curbing the global rate of malnutrition and child mortality over the past decades [34], the majority of studies on this topic have raised a number of concerns about the tools and practices of CGM. For example, scholars have expressed doubts about the reliance on anthropometric indicators alone to monitor children's growth, noting that this approach does not allow us to identify cultural and social conditions that influence how an individual child grows [22,25]. Additionally, studies conducted elsewhere have suggested that common standardized and directive nutritional recommendations that are largely rooted in the biomedical model are often conveyed to mothers without regard to their specific situations [26,35]. Furthermore, it has been shown that the focus on weight increments may lead health professionals to advise mothers to introduce infant formula to their babies in order to increase weight gain, even when doing so is unnecessary [27]. Similarly, although one of the objectives of the WHO multicenter study was to develop a tool that would allow for international comparisons, while still remaining useful for local applications [28], the existing evidence shows that there is a significant mismatch between the WHO standards and the nature of growth in some ethnic groups [36].

The limitations of growth monitoring in identifying and intervening in poor growth among under-five children stems in part from the theoretical underpinnings that underlie the development of the tools and practices of CGM. Epistemologically, the indicators used in assessing the growth of children are derived from evidence grounded in the biomedical paradigm, with child growth monitoring being defined as "the process of following the growth rate of a child in comparison to a standard by periodic anthropometric measures" [37]. Thus, in this discourse, a child is viewed as a natural phenomenon, and growth is seen as universal and biologically conditioned [22]. We believe that the reality about child growth is not universal, but is, rather, specific to a certain socio-cultural context. Children lead their lives in a variety of conditions, including in the socioeconomic and cultural contexts of their parental

² The current normative indicators include weight for age, length and height for age, weight for length / height, head circumference for age, mid-upper arm circumference for age, body mass index for age, triceps skin fold for age, and subscapular skinfold for age.

home [24]. Thus, the growth of children is shaped by not only by biological factors, but also by the socio-cultural contexts that underlie their parents' capabilities. Thus, to better understand the growth of under-five children, it is crucial to go beyond assessing nutritional outcomes by also analyzing the capabilities of both children and their parents, which include not only the children's physical outcomes, but other important dimensions, such as care and shelter [22]. The reliance on anthropometric indicators does not provide any information about the socio-cultural characteristics of an individual child, her/his caregivers, or her/his community; or information as to why some children are malnourished, while others are not [25].

Additionally, while community members and caregivers in particular have local knowledge about children's growth, and may apply other dimensions of growth that are embedded in their own local framework, the caregivers' perspectives on child growth were not considered during the development of global indicators, and they are not currently reflected in growth monitoring practices. Thus, CGM policies and practices ignore the socio-cultural context of child growth, despite evidence that there are cross-cultural differences in child growth and childrearing practices. Child care practices were identified that were based on cultural perspectives on how children grow, and what should or should not be done to achieve the optimal growth of children, as defined in a particular cultural context and society (Darak et al., unpublished). While presenting a historical overview of ethnographic studies on childhood, LeVine [20] highlighted the existing "global-local" discordance in the understanding of child growth. He stated:

"This early ethnographic literature provided the initial evidence for wide cultural variations in childhood environments used by anthropologists in generalizing about human childhood (e.g., Mead 1931; van Gennep 1960). Examination of this literature made it clear that there was divergence among peoples of the world in their concepts of the best way to raise children and of what constitutes normal child development. The stage was set for future confrontations between ethnographic evidence and the concepts of 'normal' child development emerging from theory and research in Western countries."

1.4 Development partners' and policy-makers' responses to poor child growth in Tanzania

The consequences of malnutrition have been a significant concern of policy-makers and development partners in Tanzania, necessitating both local and international initiatives to improve the situation. The attention to nutrition in Tanzania dates back to the 1950s. However, it was not until 1961, when the country gained its independence, that improving the nutritional status of the people was tackled as a major national issue [38]. In the first phase of his government (1961-1985), President Julius Nyerere declared that the country faced three major enemies: poverty, disease and ignorance, all of which were considered the manifestations and causative factors of malnutrition (ibid). To demonstrate its commitment to nutrition, the government set up in 1973 the Tanzania Food and Nutrition Centre (TFNC), an independent institute that was tasked with overseeing nutrition initiatives in the country. With the support of development partners, the government adopted various nutrition-related policies, strategies, and programs, including the Food and Nutrition Policy, which was approved in 1992 [39]. High-level policy attention to nutrition was reinforced during the Millennium Development Goals (MDGs) era, when the Tanzanian government intensified its focus on nutrition issues by developing the National Strategy for Growth

and Reduction of Poverty II (NSGRP II 2010/1011-2014/2015), and launching the National Nutrition Strategy (NNS) 2011/12-2015/16 and its implementation plan. Since undernutrition is common among under-five children, the government has placed a particular emphasis on the early diagnosis and treatment of malaria in children [6,40]; increased coverage of essential vaccination programs and micronutrient supplementation programs, such as vitamin A supplementation and deworming; and an emphasis on routine CGM for under-five children [41,42]. Tanzania also made a number of global and regional commitments to improving practices related to nutrition and agriculture, including the “New Alliance for Food Security and Nutrition”, “Ending Preventable Child and Maternal Deaths: A Promise Renewed”, “Scaling Up Nutrition (SUN) Movement”, and the “Comprehensive Africa Agriculture Development Programme (CAADP) Compact”.

To further accelerate and scale up action on nutrition in the country, the government has recently taken important steps, including integrating nutrition into national planning and budgeting, reviewing and updating the National Food and Nutrition Policy (NFNP), and launching the National Multisectoral Nutrition Action Plan (NMNAP) for the 2016/17-2020/21 period [39]. The NMNAP aims to reduce the prevalence of stunting from the current 35% to 28% by 2021, which is a critical step towards achieving the National Development Vision 2025 and the World Health Assembly nutrition goals (ibid). Moreover, the NMNAP aims to contribute to the Sustainable Development Goals (SDGs), specifically to Goal 2 on “zero hunger” that aims to end all forms of malnutrition by 2030 (ibid). Furthermore, Tanzania is placing a strong emphasis on decentralization to ensure that nutrition is on the agendas of those organizations and individuals working most closely with the affected communities [7]. Additionally, a number of development partners, including USAID and UNICEF, are implementing various programs with a focus on nutrition.

Despite the vast efforts that have already been made, undernutrition in children is still a major contributor to the persistence of all three of the enemies identified by the Tanzanian government, and a double burden of malnutrition is emerging [7,39]. A common critique of most of the existing interventions targeting childhood malnutrition (including growth monitoring practices) is that they are grounded in the mono-dimensional model that focuses only on dimensions at the child level, which is risky given the multi-dimensionality of the factors underlying poor child growth. Incorporating local frameworks and indicators at the parental or household level – such as maternal capabilities and agency – is crucial to any effort to prevent malnutrition among under-five children, and to increasing the chances that the targets set by the Tanzania Development Vision 2025 and the SDGs will be achieved.

1.5 Research approach

This thesis seeks to understand the multidimensionality of child growth through examining the socio-cultural context of child growth in Tanzania, with a specific focus on under-five children. To identify the dimensions of child growth, we applied an emic approach, engaging multiple ethnographic data collection methods, including a household census, focus group discussions, in-depth interviews, and key informant interviews (Chapter 2 provides more details). The use of ethnographic methods in this study enabled us to give voice to caregivers in the community in defining what child growth entails, which allowed us to capture additional dimensions of child growth relevant to growth monitoring practices. To further deepen the explorative dimension of this study, we employed concepts from cultural schema theory [43] and from the

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capability approach (CA), which originated in the field of welfare economics [44]. The CA is a broad framework that can be applied to the assessment of individual well-being and social arrangements [45]. Cultural schema (CS) theory is derived from the cognitive anthropological perspective on cultural meaning systems [43], as has been further described in Section 1.6 in this chapter.

The ethnographic research presented in this thesis is part of a larger project on “Normative indicators of child growth and nutrition—one size fits all?³.” This larger project aimed to develop a multi-dimensional framework for child growth that would be context-specific through engaging the capability approach [22,25]. The current research is guided by two broad questions:

- How does the socio-cultural context inform parents’ framing of and practices around child growth?
- What are contextual factors underlying capabilities for healthy child growth?

In this research, we asked both men and women to articulate their knowledge, views, and experiences of child growth. This approach is contrary to those used in most nutritional studies, which usually capture women’s perspectives only in examining child growth, while sidelining men’s voices. Researching the knowledge and experiences of child growth among both men and women enabled us to capture the gender dimension of child growth. Additionally, the multi-dimensional design used in this study provided us with an opportunity to listen to and analyze the ways in which mothers of under-five children articulated the realities underlying their capabilities for supporting healthy child growth. As we explained in detail in Chapters 7 and 8, child growth goes beyond indicators at the child level, as child growth is informed by the practical opportunities that mothers have in converting available resources into healthy child growth – which, as we have shown in this study, are socio-culturally embedded. These insights are relevant to the current international frameworks of child nutrition, and the national and international policies that are seeking to guide the practices of child growth monitoring (as discussed in Chapter 8), most of which are informed by a biomedical perspective of child growth.

1.6 Research Objectives

Child growth is embedded within a socio-cultural setting. Hence, to better understand this issue, it is necessary to examine local people’s perspectives on child growth, and to go beyond nutritional outcomes in assessing the growth of under-five children. Thus, the overall objective of this study is:

To understand how the socio-cultural context informs parents’ framing of and practices around child growth in Tanzania, and to identify the contexts underlying capabilities for supporting healthy child growth.

Three specific objectives followed from the main objective:

Specific objective 1: To examine the community’s conceptualization of *healthy child growth*, and to identify the local criteria used in assessing the growth of young children. (Chapter 4)

³ The project was funded by NWO/ WOTRO project Wo1.70.300.002, under the umbrella of IUNS Task Force “toward multidimensional indicators of child growth and development.”

The cultural framing of optimal child growth is investigated through the following research questions:

1.1 How do community members conceptualize healthy child growth? What local markers do caregivers use to recognize the healthy growth of young children?

In Tanzania, child growth monitoring practices are limited to the analysis to biomedical (anthropometric) indicators. The cultural constructs are hardly reflected in the process of assessing the growth of under-five children. Incorporating local constructs around healthy growth can improve nurse-caregiver communications, increase the utilization of services, and improve caregivers' senses of ownership and involvement. We investigated the constructs and meanings caregivers in Kilosa district assigned to healthy child growth, and the local criteria/markers they used to monitor healthy growth in their children.

Specific objective 2: To examine the community members' conceptualization of and the meanings they attached to childhood height and short stature (Chapter 5).

We examined the following research question:

2.1 What are the conceptualizations of and meanings community members attach to childhood height and short stature?

While stunting affects large numbers of under-five children in Tanzania, whether the caregivers of under-five children in our study recognized height as a marker of child growth was not clear. We believed that the wider community's cultural meaning systems or schemas informed caregivers' beliefs, perceptions, and behavior, including those related to linear growth in their children. Thus, we assumed that the caregivers' likelihood of seeking help in treating the linear growth deficits of their children depended in part on how their communities interpreted and ascribed meaning to short stature in children. We therefore investigated the caregivers' conceptualizations of child height in relation to growth, and the meanings they attached to short stature.

Specific objective 3: To identify the ways in which the social context and cultural schemas underlie community members' beliefs about and perceptions of the etiology of growth faltering; and to describe popular practices related to preventing and addressing poor growth (Chapter 6).

We examined the following research question:

3.1 How do the social context and cultural schemas shape community members' beliefs regarding the etiology of growth faltering and child care practices?

The cultural and social contexts in which the caregivers acted had a strong impact on their conceptualization of poor child growth, and informed the level of attention they gave to episodes of growth faltering in their children. In previous research on child growth and nutrition and growth monitoring practices, culture was regarded as a source of myths; i.e., it was not taken very seriously by health professionals. The only knowledge that was prioritized was that which originated from biomedical science. To identify ways to bring about behavioral changes and to promote healthy growth, we

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needed to first acknowledge the cultural rationale through which caregivers of under-five children constructed and interpreted poor growth in their children.

Specific objective 4: To identify maternal capabilities contributing to healthy child growth (Chapter 7).

We examined the following research question:

4.1 What are the maternal capabilities for supporting healthy child growth?

Child growth is multidimensional, as children and their caregivers lead their lives in a variety of socio-cultural contexts that greatly influence their capabilities for achieving healthy child growth. However, for decades, the context underlying child growth has been given little attention in growth monitoring practices. Anthropometric indicators are the only dimensions that are prioritized in assessing child growth and in developing interventions. While the physical outcomes are important tools for identifying inequalities (i.e., who is exhibiting healthy growth and who is not), they provide no information about the socioeconomic or cultural characteristics of the children, their caregivers, or their communities; or information as to why some children are malnourished. To promote healthy growth and to discourage malnutrition, we need to understand child growth beyond the physical domain, and to assess child growth as a result of the interplay of individual and contextual factors. We used Sen's capability approach [44] as a theoretical framework to identify the maternal capabilities that underlie healthy child growth among under-five children.

1.7 Theoretical framework

Qualitative research questions and data collection processes are embedded in existing theory [46]. Accordingly, we applied two theories in this study. Specifically, to answer the first, second, and third research questions, we applied the cultural schemas theory (CS). We tackled the fourth research question (of what the capabilities of mothers are for supporting the growth of their young children) using Sen's capabilities approach (CA).

1.7.1 Cultural schemas theory

In order to uncover the caregivers' conceptualization and perceptions of child growth, the current study engaged a cognitive anthropological perspective, which assumes that human knowledge, perceptions, and decision-making processes are locally constructed, in the sense that they are developed, transmitted, and maintained in a specific cultural context [47]. Culture is defined by D'Andrade [43] as a meaning system through which a group of people adapt to their environment and structure their behavior in order to make sense of their experiences of the social world. Cognitive anthropologists have asserted that the cultural meaning system of any society is composed of cultural schemas, which are ultimately shaped by individual perceptions, feelings, attitudes, beliefs, and expectations [47,48]. These schemas are context-specific, and not only function as powerful sources of knowledge and meanings, but also motivate people's behavior and responses to familiar situations. In cognitive anthropology, there is general agreement that the internalization of cultural schemas occurs through socialization processes, through people's daily interactions, and through individuals' past experiences [49]. While some schemas are individual to each person; other schemas, and particularly cultural schemas, are shared by a group of people and are highly internalized, and are thus resistant to change [50,51]. When

internalized, the socio-culturally shared values – which define what is good and bad behavior – become a template for guiding individual behavior, and for morally judging oneself and others [52].

Nutritionists have, however, hardly considered the cultural dimensions in seeking to make sense of growth in under-five children. Thus, through the use of a cultural schema framework, this thesis seeks to inform nutritionists of cultural perspectives on child growth, as understanding these perspectives is crucial for developing culturally sensitive interventions that promote healthy growth. We argue that caregivers' perspectives on ideal / poor child growth, their beliefs about the etiology of poor growth, and their responses to growth problems in their children are largely informed by the schemas of their cultural context. Therefore, efforts to understand child growth should not be limited to collecting biomedical evidence, but should also consider what local people “know” based on the meanings they attach to issues related to child growth.

1.7.2 Capability approach

The capability approach (CA) was first developed in the work of Amartya Sen [53] to explain why people sometimes starve because they lack the means to obtain food even though there is plenty of food in their locality. The CA advocates assessing an individual's quality of life in terms of their capability (i.e., what people are effectively able to do and be) to achieve valuable functionings [54]. According to the CA, people differ in their abilities to transform the available resources into achieving what “they value” [54]. The differences in people's capabilities are shaped by the independent or interactive interplay of conversion factors through which resources are converted into functionings [55]. Conversion factors can be categorized into three groups: personal, social, and environmental factors [45,55]. While *personal conversion factors* are internal to the person (e.g., physical condition, age, sex, reading skills, or intelligence), *social conversion factors* are drawn from the wider society where a person lives (e.g., public policies, social norms, power relations related to class, gender). *Environmental conversion factors* represent the physical or built environment in which a person lives (e.g., climate, housing condition, roads condition). The CA also recognizes the diversity of needs among individuals (e.g., children) in achieving the same level of functioning (e.g., healthy growth). Thus, an intervention that ignores the intrinsic diversity of people's needs will end up causing some individuals to be unequally positioned to achieve the same functioning as others. The CA further posits that in the process of achieving what they value, people exercise *agency*, which is the “ability to pursue one's goals” [54].

Applying the CA to child growth enabled us to take into account concepts of capabilities, conversion factors, and agency described above when researching this issue. The biomedical model defines child growth as the changes in a child's weight, height, and head circumference over a given period of time [56]; and it defines child growth monitoring as “the process of following the growth rate of a child in comparison to a standard by periodic anthropometric measures” [37]. These narrow definitions of child growth and growth monitoring have resulted in the development of interventions that mainly focused on improving children's nutritional status [22,26,27]. This model views a child as a natural phenomenon, and growth as a universal and biologically conditioned process [22]. In contrast, the Capability Framework for Child Growth (CFCG) defines healthy growth as “the process of

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continuous physical, psychological, and social change that builds a child's capabilities to maximize life chances at the individual and societal level” [22,25].

The capability approach informs our thinking of evaluation of child growth in relation to inequality, factors that influence the transformation of resources and personal endowments into capabilities, as well as into achieving optimal growth. We also believe that the capabilities of under-five children to achieve well-being are connected to external capabilities; i.e., to their parents' or caregivers' capabilities [25,57,58]. The parents' capabilities to provide adequate care to their children at both the individual and the household level are part of the children's opportunities to grow well [59]. Similarly, in the context of child growth, caregivers' agency and the choices they make are important factors to consider when analyzing the functionings of healthy growth that belong to the child [25]. In Chapter 7, we applied the Capability Framework for Child Growth (CFCG) developed by Yousefzadeh et al., [25] to help us examine the maternal capabilities for supporting healthy child growth. In Chapter 8, we further reflected on how the CGCF has been instrumental in synthesizing the concepts from both the capabilities approach and cultural schemas theory in our exploration of the multi-dimensionality of child growth in this study.

The value that this study brings to the understanding of child growth lies in our integration of two theories—i.e., the CS and the CA—from different fields and disciplines in order to uncover the multi-dimensionality of child growth. In this study, the CS theory and the CA formed the basis of the theoretical model that we used in framing our research approach, and in interpreting our findings. In particular, the cultural schemas theory was important for designing the study and interpreting the data that addressed research questions one, two, and three, which explored how the socio-cultural context informed parents' conceptualizations of and practices around healthy / poor child growth. The fourth question (What are maternal capabilities for supporting healthy child growth?) was inspired by the CA. Through the use of this strategy, the study yielded rich, in-depth data that enhanced our understanding of the multidimensionality of child growth, as explained in detail in Chapter 8. The multi-dimensional approach to the study of child growth is especially important for nutritional research, given that the field of child nutrition is, as Haisma et al., [22] put it, “guided by the mono-dimensional approach.” In Chapter 8, we have suggested that future research and policy initiatives could benefit from using a multi-dimensional framework of child growth to guide their decision-making processes.

In conclusion, the information collected in this PhD study has provided important insights into the conceptualization of child growth within a specific local context, and thus contributes to the discussion about what constitutes optimal / poor growth around the globe. In addition, this study has provided grounded evidence that can inform a multi-dimensional understanding of growth of under-five children in Tanzania and elsewhere, and can, therefore, contribute to the design of context-specific tools for assessing growth, which health professionals can use to provide advice to caregivers of under-five children that is more embedded in the caregivers' specific cultural framework. This is important because the effective monitoring of child growth involves not only having the proper instruments and specialized personnel to take weight and height measurements, but also the use of conceptualizations derived from the caregivers' knowledge of child growth to convey messages that are sensitive to the caregivers' socio-cultural contexts. The findings also

provide information for health programmers on existing misconceptions and popular beliefs on child nutrition-related problems that demand immediate action.

1.8 Thesis outline

This thesis is organized into eight chapters. Four of the chapters highlight various themes concerning the cultural construction of healthy / poor child growth, meanings attached to child growth, and the contexts that underlie the growth of under-five children.

Chapter 2 describes the methods we used in this study for data collection and analysis. We also discussed our motivations for choosing the study topic, and the setting where it was conducted. The research methodology was also briefly discussed in each of the chapters (4-7).

Chapter 3 recounts the researcher's fieldwork experiences, including her positionality. Thus, it describes how the researcher's position shaped the process of building rapport and relationships with participants in the field, the challenges she encountered in pursuing the current research, and the strategies she used in dealing with different field situations.

Chapter 4 (*Research question 1*) presents findings on how local people in our Tanzanian study context conceptualized optimal child growth, and the cultural criteria and markers they used in ascertaining healthy growth in young children. The participants reported using multiple markers for ascertaining healthy growth that were culturally bound. Despite the integration of some biomedical concepts into the local conceptualization of growth, the meanings the participants attached to these concepts were largely rooted in their cultural framework. These insights into the caregivers' constructs of healthy growth should facilitate communication between health professionals and caregivers during CGM activities; increase the uptake and utilization of CGM services; and, eventually, contribute to reduced levels of childhood malnutrition in the community.

Chapters 5 (*Research question 2*) presents findings on how the caregivers of under-five children in the study community conceptualize child height in relation to growth and the meanings they attached to short stature. The findings revealed that the caregivers' conceptualization of child height and their locally based knowledge of the markers and causes of stunting diverged sharply from those of the biomedical model. The participants believed that stunting goes beyond short stature to indicate faltering growth in a very broad sense. The caregivers' conceptualizations of childhood stunting were noted to be influenced by their shared schemas about healthy child growth (more details presented in chapter 4).

Chapter 6 (*Research question 3*) presents findings on how the caregivers of under-five children we studied who were living in a rural context constructed poor child growth, and the cultural schemas that underlie their beliefs about and perceptions of the etiology of growth faltering. We also explored the meanings they attached to poor child growth, and the practices they engaged in to address growth faltering in their young children. The findings revealed that the participants mainly derived their perceptions of poor growth from their cultural model, and referred to the prevailing cultural schemas when interpreting growth faltering in their young children. The analysis also

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showed that the cognitive representations of poor growth were structured to not only include their interpretations of the etiology of poor growth, and the labels and consequences associated with this etiology; they also guided their choices of curative actions.

Chapter 7 (*Research question 4*) sheds light on the maternal capabilities that contributed to healthy child growth in Kilosa district Morogoro region. We also discussed in this chapter how each of the capabilities was influenced by individual and contextual factors, and how these factors, in turn, shaped healthy child growth.

Chapter 8 presents the key findings, a synthesis of the results, and a discussion of the implications of the study. We started the chapter by providing an overview of a larger project in which this study is embedded, followed by a presentation of the research objectives / questions. We then discussed the main findings in the context of other existing scientific evidence, while also reflecting on the theoretical underpinnings of our study. In addition, in this chapter, we presented our methodological considerations. Based on the key findings, we then discussed the implications for policy, public health programs, and community-driven initiatives; and offered recommendations for policy-makers and public health programmers / health professionals aiming to promote public health, and particularly healthy child growth. The chapter concludes with suggestions for further research.

1.9 References

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Chapter 2

Research Methodology

2.1 Introduction

This chapter presents and discusses the general research methodology used in the study. Specifically, it documents the research design, data collection, and data analysis procedures used to address the research questions of this study. The chapter also provides a general overview of the study setting, including of the location, its population, and the main economic activities of the population. In this thesis, the chapters are based on articles. Thus, in each article, the research methodology is discussed briefly. This chapter, however, discusses the methodology we used in more detail.

2.2 Study design and methods

The study employed an ethnographic approach to examine the socio-cultural dimensions and contexts of child growth in Kilosa District, Southeastern Tanzania. As Field & Morse [1] observed, the knowledge gained through ethnography is “emic” in nature, which conforms to our objective of understanding child growth in its context. This methodology is well-suited to this study, as it situates each individual within a socio-cultural context, given the fact that reality is complex, and is also socially constructed [2]. Our use of the cognitive anthropological cultural schema theory enabled us to uncover the underlying schemas, meanings, cultural norms, and folk beliefs regarding both healthy and poor child growth. The capability approach enhanced our exploration of the maternal capabilities that are important for supporting healthy child growth, as well as the conversion factors and agency that underlie these capabilities (see Chapter 7, Figure 4, for the conceptual framework). The ethnography consisted of several methods, including a household census, observations, focus group discussions (FGDs), and in-depth interviews (IDIs) with fathers, mothers, elderly women, and key informants (i.e., community health workers and traditional birth attendants).

2.3 Study population & recruitment strategies

The participants in the FGDs and the IDIs were (a) mothers and fathers who had under-five children, regardless of their nutritional status; and (b) elderly women aged 45 years and older. Community health workers (CHWs) and traditional birth attendants (TBAs) were interviewed as key informants. In the Tanzanian context, TBAs and CHWs are not trained professionals. As defined by the World Health Organization, TBAs are individuals who assist mothers during childbirth, and have initially acquired their skills by delivering babies themselves or through apprenticeship to other traditional birth attendants [3]. CHWs are individuals selected from the community and trained according to government standards to provide an integrated and comprehensive package of interventions, including child growth monitoring services, particularly in areas where there is no health facility (like in the study village).

Purposive sampling was used to recruit different types of participants. The mothers and fathers who participated in the FGDs were identified with the guidance of village leaders and other relevant gatekeepers. A majority of the IDI participants were identified with the help of community health workers and through the researchers' social networks. Key informants were approached based on their experience and knowledge of issues relevant for this research. The recruitment of participants continued up to the point of data saturation, when no new information in relation to the study interest was obtained from the interviews.

2.4 Data collection methods

Prior to starting the actual fieldwork, a pilot study was undertaken to test the data collection tools. We then conducted a household census, participant observations (POs), and ethnographic focus group discussions (FGDs), followed by in-depth interviews (IDIs) and key informant interviews (KIIs). Each of these methods is described below. The qualitative data collection and household survey were performed by the principal researcher and a trained Tanzanian female research assistant with a postgraduate background in sociology. The researchers had advanced training in qualitative methods, and extensive experience in qualitative data collection procedures. To enhance the research assistant's involvement in and commitment to the study, she participated in the process of defining the research topic, the fieldwork logistics, and the pilot study. The research assistant supported the principal researcher in taking field notes during the FGDs.

2.4.1 Pilot study

Prior to the start of the actual fieldwork, the data collection instruments were pilot tested in single village in Kilosa District; i.e., in a community outside of the study setting. Like the study village, the pilot village had rural conditions and a mixture of indigenous people. The pilot study involved three FGDs and six IDIs with mothers and fathers of under-five children, and with older women. The objective of the pilot study was to ascertain how well the participants understood the question guides; to get a general sense of how the interviews and focus group discussion would go; and to gain insight into the recruitment strategies. The results from the pilot study helped the team to adapt the data collection tools before they were used in the main study. For instance, in the FGDs, some interesting cultural issues on child growth emerged that we deemed worth reflecting on and exploring further during the actual fieldwork. Additionally, while the FGD with older women was rich and provided some interesting information on child growth, we concluded that most of the questions in the interview guide were not relevant for the older women, and thus revised the IDI guides accordingly. Similarly, we found that some of the questions in both the IDIs and the FGDs were ambiguous, as the responses to these questions were not focused. We revised these questions before beginning the actual fieldwork. Furthermore, we found that issues that are important for addressing the concepts in Sen's capability approach did not emerge clearly from the discussions / interviews, and that most of the information gathered was on conversion factors that challenge mothers' abilities to provide care to their children. Therefore, we revised the question guides to include questions designed to elicit information on capabilities relevant to child growth (Please see appendices 2-7).

2.4.2 Household census

As part of the ethnography, I conducted a household census using a brief survey form in the initial stage of the actual fieldwork (i.e., after the pilot study) in order to capture the socioeconomic and demographic characteristics of the study population (as presented in Section 2.6.3 below). A total of 238 houses were covered during the household census. A trained research assistant interviewed the household heads in Swahili. The census provided the basis for our ethnography, and helped us gather contextual information on the study setting, including on the living conditions of the under-five children in the village. The household census captured information on a number of issues, including on the participants' housing conditions (e.g., size of the house, composition of the walls, material used for roofing); the type and number of people living in each participant's household, and their relationships; the number of

under-five children in each household; and each participant's educational level, type of employment, income, and type of assets owned. As well as providing information on the context in which child growth is embedded, conducting the household census facilitated our introduction to the community. My research assistant and I, accompanied by the *mwenyekiti wa kitongoji* (leader of each sub-village), visited the households in the village, and introduced ourselves and the study to the people we met. This activity provided us with an opportunity to introduce ourselves to the villagers, which facilitated future interactions, while also allowing us to map the village both geographically and socially. Additional data collected in this study—i.e. nutritional status of under-five children—is attached in appendix 1.

2.4.3 Participant observation

Fieldworkers who do not attempt to experience and understand the world of the observed through participant observation will find it difficult to critically examine their research assumptions and beliefs [4]. As it is the foundational method for ethnographic research [5], participant observation was employed in this study with the aim not only of understanding the study participants' perspectives, but of "feeling" the point of view of the research subjects [6]. To immerse myself in the culture of the study community, and to gain an in-depth understanding of the context of the study, I set up a household and lived in the study community for the entire period of the fieldwork. Soon after entering the field setting, I began to take part in village life, and participated in routine social activities, both passively and actively. I developed an interest in village issues, and spent my days on the street and in homes observing caregivers and their children. Specifically, I dropped in and chatted with neighbors in their homes, and attended church services, burial ceremonies, and village meetings. In addition, I involved myself more actively in village life, by, for example, cooking with women; participating in intimate household-level child care activities, such as feeding and carrying babies; accompanying mothers to the child growth monitoring clinic or to the market to buy groceries; joining women in fetching water from the boreholes; and accompanying women in picking greens from gardens near their house, or at farms that were a few hours' walking distance. I made efforts to befriend mothers of under-five children, grandmothers, children, local leaders, community health resource workers, and – when possible – fathers of under-five children. During my walks with community members, I engaged in informal conversations in which I asked them about various issues, such as about their daily activities, or about how the weather was affecting agriculture. These important moments enhanced our mutual familiarity, and allowed me to gauge their interest in talking to me about the issues that were the focus of my research.

The house I lived in was located on the way from the village to the village farms. This location placed me in a setting where I could easily meet and observe villagers – particularly early in the morning and in the evening – as they walked to and from their farms. In many cases, mothers were observed carrying their under-five children with them as they walked to the farms. Wandering around between the houses and the neighborhoods allowed me to become acquainted with the daily life of the village. I could, for example, observe the daily activities of men and women related to food preparation, eating arrangements, toilet use (and particularly the management of children's stools), and the arrangement of farm work.

My participation in daily activities not only allowed me to gain insights into the environmental, social, cultural, and economic contexts in which the parents /

caregivers and their children were living, it provided me with information about the general community and the health care system that was relevant to understanding the growth of the young children in the village. Additionally, being part of the community improved my knowledge of the villagers' actual behavior around child growth practices, which was useful for cross-checking the normative behavior reported through conversations. Since the local people saw me every day, I eventually stopped being a disruptive element in the life of the community. Thus, I was able to gain the trust and confidence of both the local leaders and the community members. Writing field notes is the primary method researchers use to capture data from participant observation [6]. While observing and participating in the daily life of the community, I took notes of what I observed and learned. Then, at the end of each day, I expanded my field notes into detailed descriptions.

2.4.4 Focus group discussions

A total of 19 FGDs with caregivers of under-five children, including biological mothers and fathers of under-five children, and with older women were conducted. These discussions facilitated the researchers' access to the community, enabling us to capture a broad range of information on the cultural construction of ideal / poor child growth, and to form general opinions and knowledge about the contexts that influence the growth of under-five children. As mothers tend to be mainly responsible for child care, the mothers in the village were especially important in this study. It has been widely documented that older women play a big role in advising mothers on child health issues, including on infant feeding practices [7]. Most previous studies on child nutrition and growth that examined the perceptions of the community included the perspectives only of women, while sidelining men's perspectives. Thus, the involvement of fathers of under-five children in this study enabled us to capture a gender dimension in our examination of child growth. Each FGD consisted of a total of six to eight participants. The FGDs were conducted in different venues in the village, such as in school classrooms, and in the home compounds of the principal researcher and the participants. Topic guides with open-ended questions were used for the FGDs (see appendix 2-4), the duration of which ranged from 50 to 90 minutes. When conceptualizing child growth, participants talked about cultural issues that were not foreseen in the original FGD topic guide. For instance, they talked about "*kubemenda*" (see Chapter 6), "*kudumaa*" (see Chapter 5), and "*utapiamlo*" (local term for malnutrition). This prompted the researchers to add further probes to the question guide to allow for an in-depth exploration of the observed local conceptualization. All of the FGDs were audio recorded using a digital recorder, and were transcribed *verbatim*. I moderated all of the discussions in collaboration with a research assistant, who was responsible for taking notes and handling logistical issues, including managing the recording devices.

2.4.5 In-depth interviews

The aim of conducting in-depth interviews is to capture people's "individual voices and stories" about their lives [8]. In this study, the in-depth interviews were conducted with mothers and fathers of under-five children in order to gain a rich understanding of their personal experiences on a range of issues related to child growth and development, including their perspectives on what constitutes ideal child growth, their practices around child growth and care, their perceptions and beliefs about growth faltering, and their views on the circumstances that underlie the growth of young children (see appendices 5& 6). Most of interviews were conducted in the participants' homes, which enabled me to note the poor conditions that some of children and their

parents were living in, and thus contributed to my understanding of the construction of healthy child growth in this context. In most cases, when I arrived at a participant's home for an interview, I usually found that the participant – particularly if she was a mother – was still busy, and that I had to wait for several minutes to start the interview. This allowed me to observe what the people in the household were doing, including the division of tasks between the family members, the family's eating arrangements, and the kind of attention the parents were paying to the children. During the interviews, I tried to keep the conversation on an informal level. Before going into the various topics, I attempted to establish rapport with the participants by asking them some introductory questions related to their personal socio-demographic data: i.e., about their age, tribe, religion, educational level, occupation, marital status, number of under-five children, and the composition of their family and relationships. Additionally, although I had a systematic topic guide for the interviews, I tried to conduct the interviews in a natural way. This approach tended to put the interviewees at ease, and helped them to overcome their shyness in response to the strangeness of the situation. Whereas the male participants tended to be active and outspoken during the interviews, the female participants usually took a longer time to answer a more articulated series of questions. Other than the individual participant and the researcher, no one else was present during the interviews.

2.4.6 Key informant interviews

During the fieldwork, I conducted five KIIs with purposively selected informants with rich information about the study community and the issues under research. These included three TBAs and two CHWs. The KIIs with these community health workers enabled us to gather detailed contextual information relevant to child growth in the community from the perspective of health service providers.

2.5 Data processing and analysis

The qualitative data analysis started in the field, as I wrote brief field notes about themes that emerged from day-to-day encounters. Thus, I used a grounded theory approach involving simultaneous data collection and analysis. After the data transcription was completed, I read all the transcripts to verify that they accurately represented the audio files. Next, I read the transcripts line by line to identify the initial codes, and to cross-check the analytical concepts that emerged during the fieldwork. The analysis took place at two levels. At the first level, the inductive and deductive codes were developed. The words / phrases / paragraphs that captured the emerging issues were coded. The codes that arose from the transcribed data and the concepts that emerged during data collection formed the initial coding scheme. At the second level, the patterns and relationships between the code categories were identified, and the main themes were synthesized, which reflected the cultural conceptualizations and meanings attached to issues related to child growth, as well as the conversion factors and agency informing the mothers' capabilities to support healthy child growth. (See Table 1 for an example of a code tree). Some themes represented new concepts that emerged inductively from the data, while other themes reflected the theoretical components from the CA and the CS theory that informed the data collection topic guides. Thereafter, a codebook with a description of what each code entailed was developed. The codebook was discussed among the principal researcher and her two supervisors, and was refined after a consensus was reached (see Appendix 9). Next, I imported the transcripts to NVivo 11 software (QSR International Pty Ltd, Australia), which was used to facilitate the data analysis. I coded the data, and then wrote a descriptive report. Additional data from field notes were used to clarify and expand

the meanings cited by the caregivers. The data collected through the household census were analyzed for frequencies using Stata 14.2 (StataCorp, Texas).

Table 1 An example of a code tree regarding the meanings attached to child height and stature

Code name	References
Stature is ascertained at birth	3
<i>Mpango wa Mungu</i> (God's will)	25
Heredity	52
Poor weight	4
Play & physical activity	17
Physical appearance	96
Tight calf muscles (<i>Vigimbi</i>)	2
Swollen stomach	5
Swollen cheeks	3
Skinny-dry body (<i>mwili mkavu</i>)	16
Skin condition	9
Short stature	28
Mature face	26
Mature body	25
Hair condition	8
Motor milestones	6
Intelligence (<i>Akili</i>)	14
Frequent illness	14

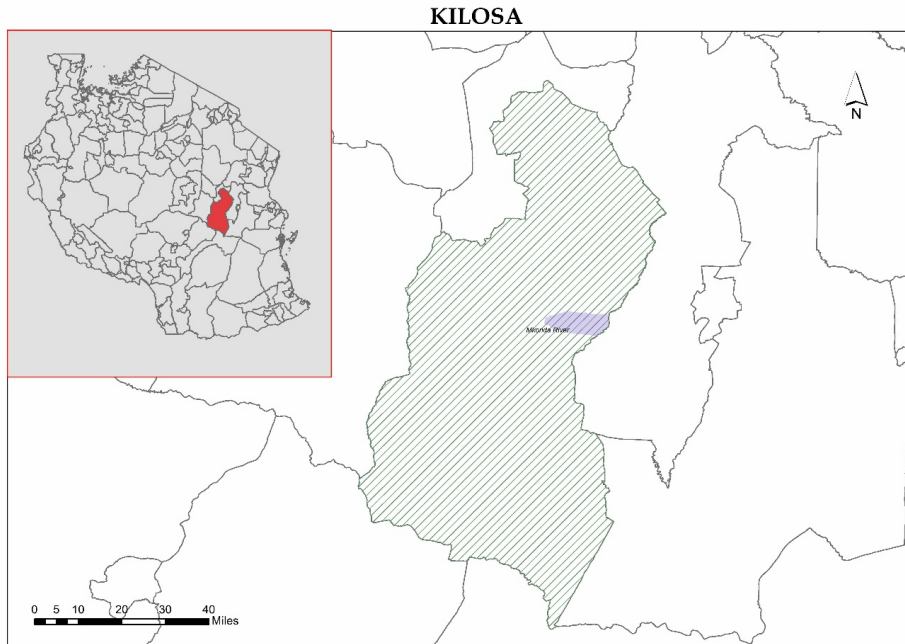
2.6 Study setting and Population

The fieldwork was conducted in Kilosa, the largest of the six districts of the Morogoro region located in Southern Tanzania, with an area of 14,918 km² and a population of 438,175 (218,378 males and 219,797 females), according to the 2012 national census. Tanzania is one of the less developed countries (LCD) located in Eastern Africa, with a high prevalence of childhood malnutrition, and particularly of stunting (35%). The current evidence indicates that the prevalence of childhood stunting in the country is higher in rural communities (39%) than in urban communities (30%) [9]. The country has a total population of 44,928,923 inhabitants. The majority of the population (73%) live in rural areas, while only 27% live in urban areas [10]. Agriculture continues to be the backbone of the economy. The under-five mortality rate is 67 per 1,000 live births [9].

Although Morogoro is one of the food basket regions of Tanzania, it has a high prevalence of childhood stunting (33%), similar to the national average (34.7%) [9]. A fundamental question that arises in light of this fact is why the majority of under-five children in this setting are stunted, even though they live in a region with plenty of food. Morogoro's rural location, high levels of food production, and relatively high prevalence of childhood malnutrition make the region an appealing choice for exploring cultural perspectives on child growth, and for examining the contexts that underlie growth in under-five children.

Kilosa district is bordered to the north by Manyara region, to the northeast by Tanga region, to the east by Mvomero district, to the southeast by Morogoro rural district, to the south by Kilombero district, to the southwest by Iringa region, and to the west by Dodoma region; as shown in Figure 1 (Map). The district is typical of the general context of Morogoro region, as it is rural, has high levels of food production, and has a relatively high prevalence of childhood malnutrition.

Figure 1 Location of study site, Kilosa district, in Morogoro region, Tanzania (red color on the left).



2.6.1 Geographical location of the study village

In collaboration with the Kilosa district administration, one village (Malangali village) in the district was chosen as the study setting based on the availability of child growth monitoring services in the village, and on the village's rural location, which typifies the general context of Kilosa district. The distance from Malangali village to the main road is approximately 6 km. The presence of a routine growth monitoring clinic in the study village enabled me to capture the caregivers' interactions with health workers, as well as the health workers' experiences with the implementation of child growth monitoring. In the section 2.6.3, I will incorporate the findings of the census (*in italics*) into the description of the study setting.

2.6.2 Ethnic composition

With its fertile land and weather conditions conducive to agriculture, the study village, like other parts of Kilosa, attracts many internal migrants. Therefore, the village has a multi-ethnic population. There are two main ethnic groups in the study village. The first is the native Bantu group, to which the majority of the population belongs. The Luguru, Sagara, Kaguru, and Pogoro people – the original inhabitants of Morogoro region – are in this group. Other minority Bantu ethnic subgroups that have migrated to and settled in this area include, among other, the Sukuma, Nyamwezi, Zaramo, Gogo, and Hehe people. The second is the Maasai group, a Nilotic minority group who migrated to this area in the past two decades in search of pasture for their livestock.

2.6.3 Housing conditions

Housing conditions are important to the healthy growth of children, as the home is where the main child care takes place. In the study setting, *the majority of houses are composed of earthen floors (87.39%), have mud walls (63.87%) that are not plastered, and have grass roofs (71.01%) – this is a typical traditional rural residential unit. The majority of households (88.66%) use firewood as the main source of energy to prepare their meals. Most of the houses are very small and have small windows, and some (particularly among the Maasai) have no windows at all. A significant number of households (50%) does not have a kitchen as separate room in the house.* While most of the families prepare their meals outside of their houses because of limited space, some prepare their meals inside with their children around. During the rainy season, most of the families prepare their meals inside their homes. This exposes the children to smoke.



Food cooked outside the house using firewood as source of energy

Additionally, many homes are surrounded by bushes that enable mosquito breeding, and have walls that can allow mosquitoes in. The poor housing conditions of many families expose their children to malaria and to cold and hot weather, and thus compromise the children's capability to live in a safe environment. Because their houses are small, many families do not have enough space to store their harvests. Thus, they incur the additional costs of transporting their harvests to Kimamba (6 km away), where they rent stores. Families and individuals who cannot afford these costs often sell their extra produce to *walanguzi* (business people from outside the village). Because *walanguzi* tend to buy harvests at low prices, this practice leads to food scarcity, and, in turn, to food insecurity in many families.



Houses close to bushes with openings in the walls allowing mosquitoes in

We also observed that many families have small earthen-floored, grass-walled, open-roofed pit latrines close to their houses. Most of these latrines have no door shutters, and the holes are not covered. As the people are used to eating at their compounds, most of which are close to the latrines, it is easy for flies to contaminate their food. Many of the Maasai in one of the hamlets do not have latrines, and they often use a bush or a field for open defecation. One of the key informants reported that this habit has contributed to stomach problems among the children and regular outbreaks of cholera in the village, particularly during the wet season. As the village does not have electricity, the majority of households use paraffin as a source of light. Most of the residents (89.92%) use mosquito bed nets, and (78.99%) have access to water through borehole pumps.



Masai woman going to fetch water from a water spring

2.6.4 Economy

Like in the majority of the villages in Kilosa and in Morogoro region in general, most of the people in Malangali are subsistence farmers who cultivate rice and maize, particularly during the rainy season, which usually runs from November to June. During the dry season, some of the population attempt small-scale irrigation

gardening. Moreover, some of the villagers rent out part of their land to others as a way of generating additional income. While the survival of the majority of the villagers depends on the cultivation of different crops, the Maasai are heavily engaged in pastoral / livestock-keeping activities, with a few households cultivating maize and rice for food. In the village, a small portion of residents are engaged in small-scale business activities, such selling vegetables, fruits, and dairy products in the marketplace. Additionally, because they often lack control over their family's farm produce / income, the women tend to cultivate their own farms in addition to the family farms, and engage in wage labor (*kibarua*) to satisfy their nutritional needs, as well as those of their children.

2.6.5 Climate

Most people in the study village depend on rainfall for their agricultural activities. Unpredictable weather is one of the major challenges they face, as it limits their efforts to boost their produce yields. Many of the people we talked to, for example, called 2016 a “year of losses” because they had poor harvests due to delayed rainfall. The men spoke regularly of their uncertainties about their income due to the vagaries of the weather. The rainy season – which starts at the end of November or early December – was a crucial factor in the study setting, as it marks the start of agricultural activities, and causes the women's tasks to change, taking them far away from home for entire days. As we noted earlier, most of the women are engaged in agricultural activities. While the majority of the women take their babies with them to the fields, some leave them at home under the care of family members, including older siblings. The start of the rainy season also marks the start of limited access to health care for the caregivers and their under-five children. The village has a flat topography, and is surrounded by rivers and farms. Therefore, during heavy rains, a large part of the village floods. These conditions during the wet season, coupled with a poor transport system, limit the parents' ability to reach health care facilities, particularly when they are having health-related emergencies. Delayed child health care and home delivery were reported to be common, particularly during the wet season. In contrast, the dry season can be very dusty. The Maasai study participants reported that their children are affected by the dust caused by the movements of large herds of cattle.

2.6.6 Division of labor

During the fieldwork, I was able to observe the division of tasks between men and women, and how it was experienced. While most of the agricultural activities were performed by both men and women with a shared aim of feeding the family, harvesting and storing the harvests were characterized as the man's responsibility. Meanwhile, the threshing of maize (*kupukuchua mahindi*), taking care of the children, and doing household chores were described as female tasks. While in the field, I often saw women and young children threshing the harvests near their houses and doing domestic chores with no help from the men. We noted that the women were overburdened with multiple roles in agricultural and domestic activities. During the wet season, most of the women spent much of their time at the farms with their babies. They typically left their homes early in the morning and returned in the afternoon or late evening. In most cases, when the mothers returned home from the farms, they continued to perform domestic chores, including preparing food for the family. Thus, the mothers' dual roles in farm work [11] and domestic work limited their ability to ensure that both they and their children were eating well, and thus affected the nutritional status of the under-five children (*ibid*).



Children following their mothers in the field



Women and children threshing maize

2.6.7 Health systems

In the study setting, the health system is pluralistic, as the local people have access to traditional medicine and pharmaceuticals. Within the village, there are two small privately owned drug shops (*maduka ya dawa baridi*), both of which are operated by unqualified attendants who offer a variety of medications, including antibiotics and antimalarials, mostly without prescription. There are 14 known traditional healers. While some work occasionally, others practice on a full-time basis. One traditional healer indicated that he attends to about 20 patients per day, most of whom are young children. This pattern has been reported in existing ethnographies of cross-cultural healing in the Eastern African context (see [12–16]). In the study village, traditional healers are mostly consulted for various health / growth issues in children, including ill health, cerebral malaria (*degedege*), walking problems, persistent coughing, and stomach problems such as diarrhea or a swollen belly. The village also has four traditional birth attendants (TBAs) who provide midwifery services. As the village lacks a health facility, the TBAs are mostly consulted by local people seeking emergency birthing assistance. One of the TBAs reported that she serves 15 clients per year. During the wet season, home delivery is a common practice due to poor road conditions.

The study village is poorly served in terms of health infrastructure. Because there is no local health facility, the people in the village depend on health services from other villages outside of the ward, which are approximately 3–6 km away. The roads are poor and are passable only during the dry season. Moreover, there is no public transport connecting the village with Kilosa town and neighboring villages. Thus, accessing health services can be challenging for the residents. Given the lack of health facilities in the village, child growth monitoring services (mainly weighing) are offered monthly in the village office (*ofisi ya kijiji*) by two trained community health workers (CHWs), who completed primary school education (standard seven). In the Tanzanian context, CHWs are individuals selected from the community and trained according to government standards to provide an integrated and comprehensive package of interventions, including child growth monitoring services – particularly in areas where there is no health facility, like in the study village – as well as health promotion

and education, disease prevention, referrals, basic curative services, rehabilitative services, and surveillance.

2.6.8 Nutritional status of under-five children

Similar to the national average i.e. 34.7%, and regional average i.e. 33% [9], the data on anthropometric measures of under-five children conducted as part of this study (see appendix 1) showed that Malangali village has a relatively high prevalence of stunting (35%), whereby 13.8 % of the children were severely stunted (<-3SD). Additionally, similar to the current national trend [9], significant differences between sexes in the prevalence of stunting existed, whereby the prevalence was high among male children (41.3%) as compared to female children (29.3%). Based on stunting prevalence observed, the data of this study also confirmed that a baby's growth condition is at risk particularly at age 0-5 months (37.5 %) and age 12-23 (54.2%). The reality observed in the study setting, and Tanzania in general, indicates that malnutrition if not addressed can represent serious obstacles to child survival and future health outcomes and life chances.

2.7 Ethical Considerations

The study obtained ethical approval from the Research Ethics Committee at the Faculty of Spatial Sciences of the University of Groningen and the Tanzanian Ministry of Health, Community Development, Gender, Elderly and Children through the Medical Research Coordinating Committee of the National Institute for Medical Research (NIMR/HQ/R.8a/Vol.IX/1974). Additionally, prior to the commencement of the research activities, I also contacted local leadership – i.e., the regional, district, and village leaders – for permission to conduct this study in their administrative areas. Full information was provided to participants verbally and as a written copy in Swahili (see Appendix 8). All interviews and FGDs were conducted after receiving written / thumbprint consent from each participant. Although local leaders and community health workers were used in approaching some of participants, the recruitment process ensured that prior to participating, each participant was informed of the nature of the research, and of his/her right to voluntary participation in the study. As the study did not include parents under age of 18, there was no need to seek consent from their parents / guardians in addition to their individual consent. The participants' anonymity was assured through our decision to conduct the discussions / interviews in private locations, use pseudonyms during the fieldwork, and remove all identifiers from the interview transcripts prior to data analysis. Thus, the names used in the presentation of the findings in this thesis are not real names. All of the transcripts, field notes, and audio-recorded information associated with this study are kept in a secured place with access limited to those responsible for analyzing the data. Generally, the study did not pose any risk to participants.

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Chapter 3

Positionality: Intersecting identities in the field

3.1 Introduction

The multiple and intersecting identities of researchers play a crucial role in shaping how they conduct fieldwork, and, in particular, in how they build rapport with and gain access to the study participants. Via the same process, these identities also influence the quality of the data researchers generate. Throughout my fieldwork, my multiple identities intersected with those of my research participants, and our identities began to “bleed” into one another [1]. In this section, I discuss the ways in which my identities and those of my study participants intersected with and influenced – both positively and negatively – my access to the research site, the research participants, and the information I gathered.

3.2 Being Tanzanian & a Swahili speaker

Mastering the language used by the people whose lives and practices researchers want to study is one of the key aspects of fieldwork. This is because it allows researchers to engage in dialogues without intermediaries, and permits them to gain a more direct understanding of the different models of expression resulting from the ways of thinking and of presenting oneself that are culturally typical of each human group [2]. Because I am a Tanzanian and a native Swahili speaker (since Swahili is the language spoken by most Tanzanians), the study community considered me an “insider.” This enabled me to gain much more nuanced knowledge and insights into the child care practices and the childrearing experiences of the caregivers. My shared cultural reference points with the participants reduced tension between us, and motivated them to freely share their opinions, views, and experiences, as they could feel confident that they were speaking to someone who clearly understood their language and ways of life.

However, on many occasions, I was treated as an outsider or a foreign expert by the community members, and was asked to follow formal procedures. For example, when I arrived in Malangali village, I was asked to sign a visitors’ book, and to fill in my personal details, including my name, my occupation, my affiliation (i.e., employer), and the date and the reason for my visit. Before arriving in Malangali village, I had been asked to observe similar formalities at the district level. In addition, before my first visit to each sub-village, the village authority instructed the sub-village leader to accompany me and to formally introduce me to the community members in the respective sub-village. Although this process facilitated my access to the study participants and ensured my safety, it also structured my entry point to the community, and shaped how I interacted with the study participants. Because I had been formally introduced, I was not able to move as freely within the community as the other community members. When I looked at the effects of those bureaucratic rituals, I realized that my identity as an outsider was visible, even though I considered myself a member of the community. I always remained an official visitor, and registered my movements in the village. In this respect, I resembled the government “experts” who sign the visitors’ books every time they visit the village offices. Through these courtesy call procedures and the signing of visitors’ books, I was being treated as an outside “expert” whose research was expected to bring material benefits, such as medicines and funding for the construction of the village health facility, as well as financial services to a few individuals or to the whole community.

3.3 “I think this is good for you, manager!”: Pregnancy and motherhood during fieldwork

Motherhood is a key marker facilitating relationships between women researchers and participants [3,4]. My experience of motherhood made it easier for me to build rapport and relationships with the study participants. When I went to Malangali village for the first time to start the fieldwork, I was already the mother of one daughter (Precious), and was in the second trimester of my second pregnancy. As the fieldwork progressed, my pregnancy became increasingly obvious and visible. Many people I met around this time showed me a great deal of consideration and empathy. My pregnancy was of particular interest to the women participants, and my condition facilitated the interactions between us. It also helped me in building rapport with the community members, as most of participants jokingly addressed me as “*meneja*,” a common Swahili nickname given to a pregnant woman that means “manager” or “boss.” For instance, one of my neighbors frequently expressed concern about my condition, and tried to get me nutritious food to eat, including peas, beans, pumpkins, and leafy greens from her family farm. When she brought some produce from the farm, she often said to me: “I think this is good for you, manager!” I also had the impression that my condition led the caregivers in the community to feel obliged to cooperate with my research. It was common during FGDs to hear participants encouraging each other to actively respond to the questions I was posing so that we could finish the discussion early, and I could go home and rest. While the study participants’ special treatment of me made me feel honored, it also complicated my fieldwork operation in certain ways. For example, one afternoon during an FGD with older women, the participants were so concerned that I had been sitting for too long that they strongly argued that we should postpone the discussion until the next day. Some participants also said they were worried about my condition because they did not see me eating anything for lunch. Although I clarified that I had eaten my lunch a bit earlier in the day, before we started the discussion, many did not believe me. Thus, while continuing with the discussion, some participants repeatedly discouraged me from prompting each participant to respond to each question, as they considered it a waste of time, and expressed concern that I was being forced to sit for too long. Several of the participants wanted me to move on to the next question as soon as one of the participants had responded to it. To avoid reducing the FGD to a one-to-one question-and-answer session or an interview, to enable group interaction, and to make sure that the discussion flowed more naturally [5], I emphasized the value of hearing each participant’s views on the issues raised and discussed. This helped to reassure them, and they were able to engage more effectively in the discussion from that point forward.

After giving birth, I was a mother of two children, and my newborn, Patricia, accompanied me when I went into the field. Being a mother gave me a certain insider status that improved my access, both emotionally and physically, to the mothers of under-five children. While in the field, many young children from the neighborhood came to my yard to play with my daughter, Patricia. The presence of young children in my yard brought me closer to them, and facilitated my interactions with their parents, and particularly with their mothers. As a result of these encounters, I came to be regarded as an ordinary parent who was just like others in the neighborhood. It is likely in part because their children made regular visits to my home that the parents came to realize that I was friendly and harmless. Additionally, having a newborn in the field not only provided me with the opportunity to join and observe the other mothers during growth monitoring clinics, it enabled me to have personal conversations with

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the mothers in the neighborhood about the well-being of their children and their home environments. Thus, my position as a mother made it easier for many of the mothers to speak freely about their personal challenges with raising under-five children, and about their struggles to make sure that their children were growing well.



Children posing for a picture holding my daughter, Patricia, as we arrived in the field

Having a young child in the field also enabled me to confirm some of the cultural practices reported by the participants during interviews in relation to child growth. For instance, when I returned to the field for the second round of data collection, my daughter, Patricia, was 10 months and two weeks old, and could not walk independently. My baby's age and developmental stage were known to my neighbors. Two weeks later, she started walking independently. One day, as I was walking to the market, I saw a group of women sitting and conversing outside one of the houses. One of these women was my neighbor, an older woman who had also participated in my interviews. As my daughter had lately been sick, she asked loudly: "How is *mzungu* faring?" I responded: "She is doing well, and she is now walking." After a few minutes of conversation, I then approached them and showed them a video clip of Patricia walking on our bed. Knowing my daughter's age, the older woman was astonished, and said: "You must have given her *dawa*" (*utakuwa umemchanja dawa*). When I indicated that I had not given my baby any medicine to cause her to walk, the older woman said: "*acha uongo wako, haiwezekani mtoto kutembea bila dawa bibi weee;*" which means, literally: "Stop your lie, madam, a child cannot walk on schedule without being given *dawa*." The whole group chuckled in support of the older women's statement.

3.4 “My daughter is of similar age as you; she is at the college too”: age, gender, and education in the fieldwork

The rapport and the relationships with the participants I built up during the fieldwork were shaped by inter-generational and intra-generational affinities and mutuality. My interactions with the caregivers of under-five children in my fieldwork in Malangali village were shaped by age-specific expectations of gender and life experience. The bigger age differences between me and the majority of the participants often invited elements of paternalism in the relationships I was forming with the participants, particularly the older women. Indeed, in some instances, the participants assumed that I was younger than I am. On more than one occasion, I was dismissed as a student writing an essay about child growth in the community. Moreover, in one exchange during a FGD with older Masai women, a participant described me as an inexperienced young pregnant woman, and said: “My daughter is of similar age as you, she is at college, too.” The older women in particular positioned me within a mother-daughter / grandparent-grandchild relationship during the interviews. Although this research experience made me feel accepted and honored, it also subjected me to criticism, as in most of the FGDs and interviews, the older women inadvertently blamed me and my research assistant when expressing their disapproval of the violation of postpartum sex taboos by young mothers, which is a cultural explanation for poor growth in babies. For instance, on one occasion during an IDI, an older woman wanted to know about my sexual relations with my husband, particularly because during that time, I had an 11-month-old baby whom I was still breastfeeding. When I disclosed that I was not practicing postpartum sexual abstinence, the older woman appeared startled, and started to lecture me on the negative effects that my sexual behavior would have on the growth of my baby. She challenged me by asking: “When your husband pours his dirties (semen / sperm) in you, where do you think they go? Are they not going to your breasts? Is your baby not sucking them?” Drawing from her cultural model, the participant wondered why I was risking the growth of my baby for the sake of sexual pleasure. She concluded by saying: “You current mothers do not know how to nurture” – by which she meant that the young mothers in the community were not taking good care of their babies, as they were not adhering to the norm of postpartum sexual abstinence. Such moments of misunderstanding presented me with the practical issue of how best, if at all, I should correct participants by saying that I was indeed a good mother, and was taking good care of my baby.

Although being young is a marginal position in many African societies, where deference to elders is a norm [6], in this study setting, my being a married mother helped to offset the disadvantage of looking young to some of the participants, as this status led me to be accepted into the peer group of “adult women” who could be expected to empathize with the women’s stories. I had a strong sense of identification with the women participants, which caused the conversations with them to go smoothly and easily. As a woman, I found it easier to share roles with the women than with the men. For example, I found myself joining other women in different activities, such as in doing their domestic chores and going to the farms (*shamba*) to collect some vegetables for our meals. Even though I might have come across as an “educated” woman – a signifier of social class and status – and thus as different from the majority women in the village, being a Tanzanian woman who was doing research in a Tanzanian community created a bond between me and the participants that made us seem more similar. Thus, a number of the mothers came to trust me, and shared their stories of marital difficulties. In particular, several of the mothers told me that their husband’s extra-marital sexual relationships, abandonment of the family, or neglect

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of the children complicated their ability to provide care to their under-five children. It was common to hear mothers say: “I think you know how men are...” – indicating that as a married woman with children, I may have had experiences similar to those they were facing. My close interactions with the women enabled me to observe that their daily routines were filled with repetitive domestic tasks and farm work, and that this heavy workload was contributing to childhood stunting in the country [cf. 7,8].

When I began my fieldwork, I naively expected that my gender would not be an issue, particularly for the women. I assumed that since I was a woman who came from a similar community, I would be able to talk with the women easily (including those who were a few years younger than I was), and that I would have few problems building rapport and trust with them. Nonetheless, I found that while I was able to build rapport and trust with the participants over time, it took longer with some individuals than with others. I learned that I had to adopt different tactics with different individuals, and to negotiate my performance of femininity in different ways. Being female or coming from a similar community was simply not enough to win their trust. I found that with some young women who appeared to be religious, I had to rely on my status as a born-again Christian to gain their trust and respect; whereas with women who seemed particularly interested in farming as their main income-generating activity, I had to be able to discuss and talk about agricultural practices, and to occasionally accompany them to the farms to pick up vegetables. These negotiations continued throughout the fieldwork phase of my ethnography, and I realized that the success of the research would depend on my ability to develop appropriate performances of femininity that would enable me to successfully manage my field relationships. Thus, as a researcher, I had to adapt to different situations, and be flexible.

The nature of the topic of child growth appeared to make me unthreatening to both men and women, but inherent in these relations were sensitive questions for men about their involvement with child care, particularly in couple relationships in which child care is a relational practice. As a female researcher, these elements were important, but it was the articulation of gendered differences that was particularly evident in how the fathers explained their realities in the socio-cultural context in which they took place. These dynamics contributed greatly to shaping the research outcomes and the narratives that were produced. For instance, I found that when questioned about their sexual behaviors during the postpartum period – which is a cultural form of child care – most of the fathers became shy, and tended to say that they were observing postpartum sexual abstinence norms – even though the majority of the mothers contradicted such claims. Gendered discourses and positioning were also apparent between the fathers and me when they were discussing their practices in relation to child care. In particular, during FGDs and interviews, most of the fathers presented themselves as not following the traditional and stereotypical forms of masculinity within their families. This is likely because they suspected that in the context of their relationship with me, and in relation to broader contemporary gendered discourses that emphasize equality, these behaviors would be interpreted negatively. For instance, the majority of the men reported during the FGDs that they involved women equally in the control and decision-making over farm produce, and portrayed themselves as being very supportive of their wives in relation to domestic chores, including providing direct care to their children, such as feeding and bathing. The mothers, by contrast, told a different story. This tendency to misrepresent their behavior made it more difficult for me to discern the particular ways in which men

performed masculinity in different spaces, such as in their homes. As the fathers explicitly negotiated our gendered differences through their narratives, I became aware of the ways in which gender was operating during the interviews, and was influencing the outcomes. In other words, this research experience led me to realize the salience of the ways in which both the fathers' social positionality and my own contributed to the co-construction of knowledge – and to what was left unsaid.

My reception as a young Tanzanian PhD student was largely positive, and this identity was one of the main reasons why I was able to gain access to the field and to informants, and why the community members agreed to participate. Many of the caregivers I met, particularly the older ones, expressed their appreciation of me as “*mtoto wa kike hodari*” (literally, a heroine), as I had overcome the boundaries of gender norms to achieve a high level of education. At times, I heard older participants encouraging each other to participate in order to help me get the information I needed to write in my book for my study. In other words, participants felt proud to help me as a daughter / sister to complete my education.

3.5 Feeling in place and embodying the field

As Coffey [9] observed, “our bodies and the bodies of others are central to the practical accomplishment of the fieldwork.” Thus, reflecting on the embodied aspects of fieldwork reminds us of what Stephens and Delamont [10] referred to as the “relative importance of body and of mind in ethnography, about the levels of physical and mental competence needed to study an energetic physical activity.” As the study setting was characterized by the gendering of social space, the research process prompted in me critical reflection of my own gendered selfhood and gender performance [11,12]– not just in terms of conversational interactions, but also in a deeper, embodied sense of feeling oneself as a gendered subject of a particular age. Being an instrument of data collection [13,14] obliged me as a researcher to perform my role in a manner appropriate to both my age and gender in order to “fit in” with my research setting. As a woman, I was conscious throughout my fieldwork of performing femininities through my speech, dress, body language, and demeanor. Thus, I tried to dress in a casual and culturally appropriate manner, avoiding eye contact that would be perceived as intimidating, avoiding jargon by using non-academic language, and allowing the participants to be in control of the time and the place of the interviews. Given my multiple markers of identity, including being a professional, a daughter, a mother, and a wife, I chose to wear clothes that were neutral enough to fit all the expected representations of me in the community. Thus, as a researcher, I had to draw a line between my role as a researcher and my role as a woman. Choosing clothing that was suitable for that purpose was not an easy task, and the pressure sometimes made me anxious. Although I tried my best to position myself as an ordinary African / Tanzanian woman, the children and caregivers often perceived me and my daughter as “*mzungu*” – the popular Swahili word referring to a “white” person. The participants’ perception of my daughter, Patricia, and I as *wazungu* (a plural form of *mzungu*) may have arisen in part because they saw my supervisor, Prof. Hinke Haisma (a white woman) at my home when she visited me during the first round of fieldwork to provide supportive supervision. Moreover, my skin complexion and that of Patricia may have appeared to be lighter than those of the other people in Malangali village. The positive connotation of lighter-skinned people as “whites” is common in Tanzania, which in this context led the caregivers and their children to admire us. This perception may have encouraged the mothers and their

children to come to my yard to spend time, and thus made it easier for me to connect with them.

Despite the rich data I gathered in this study, there were situations during the fieldwork that left me, as a mother, feeling emotionally devastated and guilty. During the interviews, I felt compassion for some of the participants, particularly for the mothers as they recounted the emotional struggles, they faced in trying to ensure the healthy growth of their young children. For instance, I felt emotionally disturbed when interviewing one heartbroken young mother, Maria, who started crying when talking about the anguish she was experiencing due to her child's poor growth, which was caused by a number of constraints. Maria was unhappy with her baby's growth, and was worried about his survival. It was important for me to show empathy and to respond to Maria's situation, while at the same time staying focused on the questions I was asking. Striking this balance was challenging. Since the recent weight record of Maria's baby indicated he was malnourished, after the interview I advised her to see a doctor for appropriate help. I also spoke to the community health worker responsible for growth monitoring services in the village, urging him to refer Maria to the hospital to get immediate support. Being a mother who was living and raising children in a privileged social class, I felt guilty for not being able to improve the living conditions of the participants and their children— even though that was not the objective of this study, and was a more complex problem than I was able to address. Beyond having strong feelings of empathy for the participants, this research experience was a constant reminder to me of the inequalities between the contexts that under-fives children are raised in, and of opportunities that I have. As a mother of under-fives, I felt that I had a moral obligation to help in some situations. At times, I supported a few of the poorest households by purchasing drugs for their ill children when they were unable to do so.

Finally, as Goulding [15] pointed out, researchers do not enter the field empty-minded, but rather have their own disciplinary academic backgrounds that inform the particular lens they use in investigating the subject of interest. In my particular case, I approached this study with my world view as a sociologist / cultural anthropologist – or, rather, as an interpretive-constructivist. In his notion of “betweenness,” Nast [16] recognized that a researcher is always negotiating multiple differences in research, and is never entirely an insider or an outsider. This observation resonates with my research experience, as given my multiple selves, I found myself in a complex situation, positioned in a nexus of intersecting power relations, with some of these relations placing me in the position of an insider, and others placing me in the position of an outsider. Such a complex positioning may lead to uncertainties about which identities and power relations are influencing the evaluation and interpretation of the data [17]. Thus, the best description of my role as a researcher in this study context would be as an insider-outsider.

3.6 Working in the Netherlands as a PhD researcher

When I started my PhD, I was the mother of one child (five years old). I then had a second child during the second year of my PhD. Although working in the Netherlands as a PhD researcher while leaving my little children behind in Tanzania allowed me to have enough time to work on my PhD, it made fulfilling my role as a mother hugely challenging. I often felt guilty for not being available to my children as much as might seem ideal, and for weaning my second baby at the age of 15 months so that I could travel back to the Netherlands for work. The guilt became especially intense when I was exposed to scientific evidence from the WHO that breastfeeding promotes healthy

growth, and that premature weaning can have negative consequences for child growth. This experience showed me how challenging combining motherhood and career development can be. Nevertheless, my positive work environment made my situation more manageable. For instance, my PhD salary and entitlement of eight weeks annual leave enabled me to fly back to Tanzania at least three times a year to see my family. Additionally, one of my initial supervisors (Dr. Sepideh Yousefzadeh) had a young child, which helped me a lot, as she often invited me to her home where, among other things, I was able to play with her young child. Similarly, the diverse and international atmosphere that the Faculty of Spatial Sciences and the University have fostered over the years provided me with an exciting work environment that helped me overcome my loneliness and homesickness.

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Chapter 4

“He usually has what we call normal fevers”: Cultural perspectives on healthy child growth in rural Southeastern Tanzania: An ethnographic enquiry

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Chapter 4. Cultural perspectives of healthy child growth

Abstract

While parents' construction of and actions around child growth are embedded in their cultural framework, the discourse on child growth monitoring (CGM) has been using indicators grounded in the biomedical model. We believe that for CGM to be effective, it should also incorporate other relevant socio-cultural constructs. To contribute to the further development of CGM to ensure that it reflects the local context, we report on the cultural conceptualization of healthy child growth in rural Tanzania. Specifically, we examine how caregivers describe and recognize healthy growth in young children, and the meanings they attach to these cultural markers of healthy growth. Caregivers of under-five children, including mothers, fathers, elderly women, and community health workers, were recruited from a rural community in Kilosa District, Southeastern Tanzania. Using an ethnographic approach and the cultural schemas theory, data for the study were collected through 19 focus group discussions, 30 in-depth interviews, and five key informant interviews. Both inductive and deductive approaches were used in the data analysis. Participants reported using multiple markers for ascertaining healthy growth. These include 'being *bonge*' (chubby), 'being free of illness', 'eating well', 'growing in height', as well as 'having good *kilos*' (weight). Despite the integration of some biomedical concepts into the local conceptualization of growth, the meanings attached to these concepts are largely rooted in the participants' cultural framework. For instance, a child's weight is ascribed to the parents' adherence to postpartum sex taboos and to the nature of a child's bones. The study noted conceptual differences between the meanings attached to height from a biomedical and a local perspective. Whereas from a biomedical perspective the height increment is considered an outcome of growth, the participants did not see height as linked to nutrition, and did not believe that they have control over their child's height. To provide context-sensitive advice to mothers during CGM appointments, health workers should use a tool that takes into account the mothers' constructs derived from their cultural framework of healthy growth. The use of this approach should facilitate communication between health professionals and caregivers during CGM activities, increase the uptake and utilization of CGM services, and, eventually, contribute to reduced levels of childhood malnutrition in the community.

4.1 Introduction

Malnutrition is one of the most serious health problems affecting under-five children in Sub-Saharan African (SSA) countries, including Tanzania [1,2]. While malnutrition rates in Tanzania have declined for under-five children since 1999, the rate of chronic malnutrition or stunting remains high, at 35% [1,3]; and exceeds 40% in some parts of the country [1,3,4]. Overall, more than 2.7 million under-five children in the country are stunted [1], a condition that is likely to impair their future learning, productivity, and opportunities to escape poverty [5]. Thus, malnutrition remains the single greatest cause of child mortality in Tanzania [1,6,7]. The prevalence of childhood malnutrition – and of stunting in particular – is higher in rural than in urban communities [1,3,4].

Nutrition initiatives in Tanzania date back to the country's independence in 1961, at which poverty, disease, and low levels of knowledge – key causes and consequences of malnutrition – were declared major enemies of the nation's development [6]. However, high-level policy attention to nutrition was witnessed during Millennium Development Goals (MDGs) era, when the Tanzanian government intensified the discussion on nutrition issues in developing its National Strategy for Growth and Reduction of Poverty II (NSGRP II 2010/1011-2014/2015), and launched the National Nutrition Strategy (NNS) 2011/12-2015/16 and its implementation plan. Despite the vast efforts made to address undernutrition in children, the rate of stunting hardly changed during the MDG era [8]. As part of renewed efforts at accelerating and scaling up nutrition action in the country, the government has recently taken important steps, including integrating nutrition into national planning and budgeting, reviewing and updating the 1992 into a 2016 National Food and Nutrition Policy (NFNP), and launching the National Multisectoral Nutrition Action Plan (NMNAP) for the 2016/17-2020/21 period (6). The NMNAP is regarded as a 'double duty' multi-sectoral action plan, as it addresses both undernutrition (acute malnutrition and stunting) and the emerging double burden of malnutrition (ibid).

Additionally, the government of Tanzania, together with various partners, has been implementing recommended preventive and curative interventions, including the early diagnosis and treatment of malaria in children [1,9], and the increased coverage of essential vaccination programs and micronutrient supplementation programs, such as vitamin A supplementation and deworming [6]. Similarly, given that in Tanzania undernutrition manifests at an early age, more emphasis has been placed on routine CGM for under-five children [7,10]. While the nutritional strategic frameworks stress the importance of aligning cultural contexts in designing and implementing interventions targeting childhood malnutrition, the growth monitoring approach used in Tanzania [11], as in other countries [12,13], employ indicators grounded in the biomedical model. Although health workers tailor advice to the specific situation of each individual child, the basic message conveyed to mothers is derived from the biomedical model [14]. The reliance on this model persists even though caregivers' views are rooted in their cultural framework, which includes ideas about health and growth. A lack of sensitivity to the local constructs and meanings attached to child growth can impair communication between health professionals and caregivers [14,15], thus, the advice provided may fail to have the intended effect [12].

Previous research on child growth in Tanzania focused on determinants of childhood malnutrition, which is reasonable given the high prevalence of undernutrition in young children and its major contribution to child morbidity and mortality. For

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example, poor growth has been found to be more prevalent in the children of women in polygamous marriages [16,17], particularly the children of first and second wives [16]. Substantial farm labor demands placed on the mothers [17,18], the household's characteristics, and the family's economic status [19] have been identified as significant risk factors for stunting in under-five children. An ethnographic study among the Hadza noted that the degree of a child's relatedness to the male head of the household mediated the quality of care the child received [20]. Similarly, certain aspects of Chagga history, demography, political economy, and culture have been shown to contribute to the inability of families to provide adequate childcare [21]. The evidence presented above indicates that household and societal arrangements influence caregivers' (and particularly mothers') ability to provide the care needed to ensure that their children are growing well. These findings do not, however, explain how caregivers conceptualize ideal child growth. By understanding caregivers' perceptions of healthy growth, healthcare providers will be in a better position to encourage growth and discourage malnutrition in children.

Although the Tanzanian government and other health programmers have tried to make child growth-related interventions accessible to most communities, little is known about how health service providers can collaborate most effectively with caregivers in improving child growth. This study aims to fill that gap by using cognitive anthropological perspectives of the cultural meaning system in exploring 'emic' perspectives on healthy child growth. We seek to answer two main questions. First, how do caregivers describe a child who is growing well? Second, what meanings are attached to these cultural markers of growth? Only by understanding the constructs and meanings caregivers assign to healthy child growth can public health professionals (PHPs) become culturally competent enough to develop culturally-embedded interventions [22]. In health programming for the treatment of acute respiratory infections, the identification of symptoms as perceived by the mothers in their respective socio-cultural contexts helped PHPs design messages that motivated mothers to seek medical care for their sick children [23]. Similarly, a recent systematic review on the sustainability of health interventions in SSA found that the integration of community values into the development and implementation of interventions increased the likelihood of their sustainability [24]. Designing interventions that incorporate local constructs around healthy growth will not only facilitate nurse-caregiver communication and increase the utilization of services; it will increase caregivers' sense of ownership and involvement. Thus, the use of this approach increases the chances that interventions will be sustainable, and will prove successful in reducing child malnutrition.

According to D'Andrade [25], a community's cultural meaning system is composed of shared cultural schemas. These cultural schemas form the reality-defining system and provide information about what states of the world can be and should be pursued (ibid). These schemas are, therefore, context-specific interpretive devices (ibid) that facilitate the creation of knowledge and the attribution of meaning to objects [26]. Thus, how a certain health condition is conceptualized (e.g., healthy child growth) depends on the cultural meaning systems of each community (ibid). Straus and Quinn [27] have argued that schemas exist for all kinds of phenomena (including child growth), and are embedded in broader systems of cultural meaning. While some schemas are individual to a person, others, cultural schemas, in particular – are shared by a group of people. Such schemas are highly internalized, and are thus difficult to change [28]. The wider community's cultural schemas inform individuals' beliefs and

perceptions, and shape their behavior and experiences, including those related to child growth. The cultural schemas theory was relevant to this study, as it helped the researchers understand how caregivers conceptualize healthy child growth in their local setting, and the meanings they ascribe to markers of healthy growth.

4.2 Methods

4.2.1 Study setting

The ethnography was conducted in a rural setting of Kilosa District, Southeastern Tanzania. Kilosa is predominantly rural, and agriculture is the backbone of its economy. In collaboration with district leaders, one village was selected for this study based on its rural location and its access to CGM services. The availability of CGM services in this village enabled us to capture caregivers' perceptions of these services and their interactions with health workers. Like other parts of Kilosa district, the study village is a multi-ethnic settlement, with fertile land and weather conditions conducive to agriculture that attract internal migrants. There are two main ethnic groups in the study village. The first is the native Bantu group, to which the majority of the population belongs. The Luguru, Sagara, Kaguru, and Pogoro people are in this group. Other minority Bantu ethnic sub-groups that have migrated to and settled in this area include the Sukuma, Nyamwezi, Zaramo, Gogo, and Hehe people. The second group is the Maasai, a Nilotic minority group who have migrated to this area in the past two decades in search of pasture for their livestock.

Most of the people living in the area are subsistence farmers who cultivate rice and maize, particularly during the rainy season that usually runs from November to June. During the dry season, some of the population attempt small-scale irrigation gardening. While most of the residents are engaged in agricultural activities, the Maasai people are mainly focused on livestock keeping, with a few households cultivating maize and rice for food.

Like many other rural villages in Kilosa District, the village is poorly served in terms of health infrastructure. As there are no health facilities in the village, the residents depend on health services provided in other villages outside of the ward that are approximately 3-6 kilometers away. The road to these villages is poor, and is passable only during the dry season. Within the village, there are two small privately owned *maduka ya dawa* (drug shops), both of which are operated by unqualified attendants who offer a range of medications mostly without prescription, including antibiotics and antimalarials.

4.2.2 Study design and methods

The study employed an ethnographic approach to examine caregivers' constructs and meanings they attach to healthy child growth. As Field & Morse [29] has observed, the knowledge gained through ethnography is 'emic' in nature, which conforms to our objective of understanding healthy child growth from the local people's perspective. The fieldwork was undertaken for three months in the study setting using multiple data collection techniques, including focus group discussions (FGDs), in-depth interviews (IDIs), key informant interviews, and field notes (see Table 2).

Table 2 Information for FGDs, IDIs, & KIIs participants

Activity	Number of times the activity was performed	Age range	Gender		Level of education	Total number of participants
			Male	Female		
FGDs	19	18-74	39	98	0 – form IV	137
IDIs	30	17 – 71	11	19	0 – form IV	30
KIIs	5	39-50	1	4	0 – standard 7	5

4.2.3 Participant recruitment

The participants in the FGDs and the IDIs were (1) mothers and fathers who had under-five children, regardless of their nutritional status; and (2) women aged 45 years and older. Community health workers (CHWs) and traditional birth attendants (TBAs) were interviewed as key informants. The purposive sampling technique was used to recruit the participants. For the FGDs, older women and parents of under-five children were identified from the general community with support from local leaders and influential people. Many of the IDI participants were identified with the help of the CHW and through the researchers' social networks. The key informants were selected based on their experience with and knowledge of the issues of research interest. The recruitment of the participants continued up to the point of data saturation, when no new information related to the topics of interest was obtained from the interviews.

Two researchers participated in the data collection process: the principal researcher (first author) and a trained Tanzanian female research assistant with postgraduate social science backgrounds in sociology. Both researchers had advanced training in qualitative methods and extensive experience in qualitative data collection procedures. The researchers' access to the study community was facilitated by a number of factors, including their proficiency in Swahili (the language spoken by almost all of the local people), as well as their skills in establishing rapport. The principal investigator (first author of this paper) was pregnant during the first round of interviews, and took her newborn daughter with her in the field during the second round, which made it easier for her to establish rapport with the mothers and their children. Being a mother of an under-five child also gave her the opportunity to attend growth monitoring clinics, where she could observe the mothers' activities and interactions around growth monitoring issues.

4.2.4 Data collection

The data presented in this article are part of a larger ethnographic study on the socio-cultural dimensions and contexts that underlie growth of under-five children in Southeastern Tanzania. Prior to the start of the actual fieldwork, the data collection instruments were pilot tested. The results from the pilot study helped the team refine the guides before they were used in the main study. The ethnography (actual field work) was conducted in two phases. From July to September 2015, the researchers conducted 19 focus group discussions (seven with mothers, five with fathers, and seven with elderly women). These activities facilitated the researchers' access to the community, and enabled them to capture the general perceptions of child growth in the community and the general contexts underlying growth of under-five children. Before continuing with the next phase of data collection, we transcribed and coded all FGD recordings. Our aim was to be able to adapt the interview guides based on the

FGDs. – something which enabled us to validate the information generated through the FGDs, and to address the gaps that were identified. From August to September 2016, 30 in-depth interviews (12 with mothers, 11 with fathers, seven with older women) and five key informant interviews with CHWs and traditional birth attendants were conducted. The interviews captured the caregivers' personal views on healthy child growth, and information on ways in which they were tracking growth in their individual children. Topic guides with open-ended questions were used in both the interviews and the FGDs, the duration of which ranged from 50 to 90 minutes. The IDI guides were adopted before the start of the second round to address the gaps in the information obtained through FGDs. Emic perspectives on healthy child growth (a focus of this paper) were mostly captured under the topic 'community/parents' views and opinions on (ideal) child growth'. In the FGDs, a general question was posed: 'In your community, how can someone know that a child is growing well?' The participants were probed on a range of markers used in ascertaining healthy growth in a child. During the IDIs, parents were asked for their views on the growth of their individual under-five children. The parents who reported that their children were growing well were asked to justify their statements. In line with local conceptualization of healthy growth, the participants were also asked for their opinion on CGM activities (see appendix 2-7). All of the interviews and FGDs were recorded using digital recorders, and were transcribed verbatim. The FGDs and interviews were conducted in Swahili, which is the national language in Tanzania. Swahili is spoken by all of the people in the community, and is the mother tongue of the PI. The interviews and FGDs were conducted in locations chosen by the participants. While most of interviews were conducted in the participants' homes, the FGDs took place in different venues in the village, such as school classrooms (after school hours), and the principal researcher's and the participants' home compounds. Other than the participants and the researchers, no one else was present during the FGDs and IDIs.

4.2.5 Data analysis

To preserve linguistic authenticity [30], all of the transcripts were analyzed in the original language; i.e., in Swahili. Following the completion of the data transcription, the principal researcher read all of the transcripts to verify that they accurately represented the audio files. She then read the transcripts line by line to identify initial categories and crosscheck the analytical concepts that emerged during the fieldwork. The analysis took place at two levels. At the first level, the inductive and deductive codes were developed. At the second level, the patterns and relationships between the categories were identified and the main themes were synthesized, which reflected the cultural conceptualizations and meanings attached to healthy child growth. Some themes represented new concepts that emerged inductively from the data, while other themes reflected the theoretical components that informed the data collection topic guides. After the deductive and the inductive concepts were combined, the following themes emerged: (i) being *bonge*, (ii) being free of illness, (iii) eating well, (iii) growing in height, (iii) having good *kilos*, and (iv) contradictions between cultural and biomedical assessments of healthy growth. NVivo 11 software (QSR International Pty Ltd, Australia) was used to facilitate the data analysis. Field notes were used to clarify and expand the caregivers' meanings by providing additional data not included in the transcripts. In the process of writing this paper, the research team jointly discussed which quotes would effectively illustrate the themes identified throughout the process of analysis.

4.2.6 Ethical issues

The study was approved by both the University of Groningen Research Ethics Committee and the Tanzania Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC) through the Medical Research Coordinating Committee (MRCC) of the National Institute for Medical Research (NIMR). All interviews and FGDs were conducted after receiving written/thumbprint consent from each participant. Permission to conduct this study was also sought from regional, district, and community leadership prior to the commencement of any research activity. In addition, the researchers conducted community sensitization meetings and which they introduced themselves and the purpose of the study to the community members. Although local leaders were used in approaching some of participants, the recruitment process ensured that each participant was informed of the research and his/her right to voluntary participation in the study prior to his/her participation. All interviews and FGDs were conducted after receiving written/thumbprint consent from each participant. The confidentiality and anonymity of the study participants was assured by using nicknames to identify them during the fieldwork. Any real names of participants that were captured accidentally in the recordings of conversations during FGDs or interviews were removed during the data-cleaning process. Thus, the names used in this article are not real names. The study did not pose any risk to participants.

4.3 Results

The participants mentioned multiple gauges and specific markers that they have used to ascertain healthy growth in a child. In this section, we present five markers (see Table 3) that the community members reported using to identify healthy growth in a child, and the meanings they attach to each marker. We start with those markers that reflect cultural constructions, followed by those that contain both cultural and biomedical elements. We also highlight the contradictions between cultural and biomedical markers of healthy growth. In the quotes from FGDs and IDIs, 'I' stands for 'interviewer' and 'P' stands for 'participant'. Although it was not the goal of this study to compare the participants based on ethnicity, we note that our analysis found no cultural differences in perspectives on healthy child growth between the ethnic groups represented in the study setting.

Table 3 Healthy growth markers as identified by the study participants and biomedical indicators

Indicators	Emic markers	Biomedical markers
Being <i>bonge</i> (chubbiness)	<ul style="list-style-type: none"> - Becomes fat - Body expands - Is looking fat - Has a good body - Looks healthy - Clothes are tightening - Growing out of clothes - Waist chain tightens - Traditional bracelet tightens - Fleshy round cheeks - Fleshy body 	Body composition
Being free of illness	<ul style="list-style-type: none"> - No prolonged illness - Not intermittently sick - Malaria fever passes away from the child - Going a long time without malaria - No malaria since birth - Has ordinary malaria fever <ul style="list-style-type: none"> • Malaria easily cured • Malaria but no weakness • Malaria but no hospitalization • Malaria fever calmed down by Panadol • Malaria that quickly responds to treatment • Malaria but no weight loss 	Healthy
Eating well	<ul style="list-style-type: none"> - Eats every food given - Is not choosy - Finishes usual portion of food - Demands food when hungry - Eats according to stomach size - Stops eating when full 	Has good appetite
Growing in height	<ul style="list-style-type: none"> - Looking taller than before - Clothes become too short - Height increases - Takes things from high places the child could not reach before - Shoots up 	Height for age
Having good kilos (Weight)	<ul style="list-style-type: none"> - Is heavy (when carried) - Feeling overwhelmed / tired when carrying the child for a long distance - Weight marked in green area of growth chart - Weight gain accelerates - Has kilos - Kilos do not go down 	<ul style="list-style-type: none"> - Weight for age - Weight gain - Weight marker in green area of growth chart

4.3.1 Being *bonge* (chubby)

The participants reported using a child's appearance to ascertain healthy growth, saying they believe a child who is growing well is chubby or has a large body. As one key informant put it: 'A *healthy and well growing child has a big body size*' (CHW, 50yrs, KII). Remarks such as *ananenepa* ('is becoming fat,') *ni bongwe* ('is chubby'), *ana afya* ('is healthy,') or *ana mwili* ('has a good body') were commonly used to describe a child who was growing well. A child's body size was also cited by some parents of under-five children as one of the first signs they look for in judging a child's growth at birth:

As soon as the baby is born... the first thing that you do when you enter the room to see the baby is to check her body. *Hajakondeana?* ('Is s/he not skinny?'). Is s/he fat? Thus, you look at her and say, 'Yes! I have got a perfect *mama*' (referring to a daughter) (a father, FGDs).

The caregivers – and particularly the women – reported using their child's clothing size as a gauge of growth, observing that a child is considered to be growing if his/her clothes seem to be tightening over time:

You can tell by looking at her clothes. When you see that some of them are tightening, you then know she is growing (a mother, FGDs).

Some of the older women added that an increase in a child's body fat could be ascertained by looking at the traditional bracelet (*kamwa*) around the child's hand or waist. If the bracelet tightens, it is clear that the child's body has grown:

The measures we use at home include clothes and black threads (traditional hand/waist bracelets). When the thread starts to tighten, you know the child is growing. So you expand the size. When it tightens, you know the child is moving (growing). You then say, 'This one is grown up now' (an older woman, FGDs).

While the majority participants ascribed a child's fatness to good nutrition or genetics, some of the older women said they believe that a child's fatness is a function of God's will (*Mpango wa Mungu*), and some perceived it as a negative effect of childhood vaccinations. Although several participants said they cherish a chubby child, they also noted that not all fatness indicates healthy growth, and differentiated between 'good' and 'bad' fatness. Bad fatness was believed to be caused by and indicate diseases in a child. A child with bad fatness was described as one who looks fat, but is less active and light, like a floating buoy (*mnene na mwepesi kama boya*).

R: I would like to clarify; there are two sorts of fatness. You may find that a particular child is fat but has some problems, even his weight is not sufficient. But another child may be fat and her/his health is good. He grows well.

I: What is the one who is fat and grows well like?

R: S/he is fat and active (*unene wake wa kuchangamka*). Just by looking at her/him you have to say that this one is good. But for the one who is 'stunted' (general term for poor growth), you find that s/he is fat but her/his fatness is different. S/he is not as active as his/her fellow who has healthy fatness (CHW, 40 yrs, KII).

The interpretations of and meanings attached to fatness in a child expressed by the participants were rooted in the community's cultural meaning system regarding body image, and were specifically influenced by the cultural value that chubbiness connotes good health and beauty. The community's system of assigning meanings to body image appeared to inform the mothers' schemas for their own children and those of others, with many saying they envy the parents of children who look chubby and have fleshy cheeks:

- P: A fat child is more beautiful than a thin one. I can see what the children of other people look like.
- I: Why do you say that she is beautiful?
- P: Everyone praises her, saying "This child is *bonge* (chubby). She is indeed *bonge*." As a mother, that makes you very satisfied. You are satisfied that your child is fat. She is in good health (a mother, 40 years, IDI, farmer).

When your neighbor gives birth to a baby with a good body, one whose face looks nourished, and her little cheeks are fleshy, you say, 'Kha! My neighbor has given birth to a beautiful baby. What a pleasure!' That is what we say; that her baby is growing well. When you carry her, you feel that today you have carried a beautiful baby. I can feel her weight in my hands (a mother, FGDs).

Similarly, in the participants' cultural context, chubbiness in a child is seen as an indicator that the parents are providing good care. Thus, when a child looks fat, the parents are praised by community members as being good caregivers:

When someone's child is chubby, people say, 'Ah, our colleague has done a great job. She takes good care of her child' (an older woman, FGDs).

Labeling chubby children as 'healthy' or 'beautiful' could lead to the social exclusion and stigmatization of children whose bodies are small. Several of the participants spontaneously reported that community members enjoy carrying a chubby child and are less interested in carrying a thin one. In describing the stigma thin children face, parents in different FGDs recounted that people in the community have gossiped about the health of a particular thin child:

A child who is fat is very much cherished by people in the community. In most cases, people say, 'Ah, look at that child of [name], she looks attractive'. That child is very much loved by many people in the community. Even when she crawls toward someone's feet, the person feels happy and picks her up. But if a child seems thin, people may say, 'Ah, look at that little one, I think s/he has some problems' (a father, FGDs).

4.3.2 Being free of illness

Whether a child is free of illness, and particularly of malaria, is also seen as an important dimension of healthy growth. In their accounts, participants used the term *'homa'* (fever) interchangeably with *'malaria'*, a local term for malaria. The participants described a child who is growing well as resistant to illness, using phrases such as 'fevers / illnesses pass away from her', 'she does not get fever frequently', s/he 'is not frequently ill', and s/he 'has ordinary fever/malaria' (*'homa / malaria ya kawaida'*). The caregivers said they can tell whether a child has malaria by touching his/her skin for warmth or by taking him/her to the hospital for diagnosis. A child's

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resistance to illness, and to malaria in particular, was spontaneously mentioned as an important indicator that a child is growing well:

When malaria passes away from her, then I know that my child is growing well. So, that is the indicator [*kiashiria*] of a child whose growth is healthy (a father, FGDs).

A child who is growing well does not get sick frequently. He gets sick very rarely (CHW, 50 years, KII).

- I: How do you see the growth of your grandchild [name]?
- R: Janet is growing well. I know that she grows well as ‘her fevers are the normal ones’ (*homa zake ni za kawaida*). So, she grows well. When she has a fever (malaria) and you give her medicine, she recovers easily (*anapona tu kirahisi*). Unlike others who can get the dosage but are resistant to it (the medicine)! It is not until s/he is admitted that her fever calms down. But for her, when she has fever (malaria) and you give her ‘*mseto*’ (ALu), she gets well. We in the villages do not have further expertise. When you look at the child and see that s/he does not get fever frequently, we see that s/he is growing well (TBA, 48 yrs, KII).

In the in-depth interviews, most of the parents reported that their child was growing well because she had *homa ya kawaida* (‘ordinary fever’) – referring to malaria fever that ‘does not weaken the child or make her thin’, ‘is easily treated or cured with pain relievers or home remedies’, and ‘does not lead to hospitalization’. Having an ‘ordinary fever’ was thus seen as a sign that the child was growing well. In this case, self-medication and the delayed seeking of treatment for a child’s illness was described as common:

John’s growth is normal. He usually has what we call normal fevers. When his fever comes, it does not necessarily require you to buy ‘*mseto*’ (ALu) or any other anti-malaria drug. You only buy him Panadol and the fever comes down. We then say that the fever has perished (a father, 48 years, IDI, farmer).

Zuena is growing well. She does not have frequent fever. Her fevers are ordinary. When she has a fever, I take her to the hospital. She is given medicine and goes up to six months, eight months, or even one year before getting malaria again (a mother, 42 years, IDI, farmer).

In the study community, the high rate of infectious diseases, and particularly of malaria, appears to have permeated people’s cultural meaning systems, leading them to conceptualize healthy growth as being based on a child’s ability to fight off *homa* (malaria). Demonstrating how community members’ shared experiences with malaria infection have led them to have similar schemas, one of fathers in the FGDs explained that the community members’ perceptions of fever have been shaped by the pervasiveness of malaria in their region:

Where we live, a child who is growing well is one who is not often ill. This is because in our environment, diseases such as malaria tend to attack our children and retard their growth. Even if a child was growing well, her growth may falter if she gets malaria. Thus, you are very lucky if your baby has never had a bad case of malaria; you conclude that your child is indeed growing well (a father, FGDs).

4.3.3 Eating well

A child's eating habits emerged as one of the dimensions that community members use to discern healthy growth in a child. Many of the participants described a child who is growing well as one who eats or breastfeeds well. A child is considered to be eating well if s/he has good appetite, never vomits after eating, is not picky about the food s/he eats, finishes his/her usual portion, stops eating when full, and demands food when s/he feels hungry:

A child who is growing well is one who likes to eat. Even if s/he is still breastfeeding, if you give her/him porridge s/he drinks it. When you give her *ugali* (stiff porridge) s/he as well eats. His/her growth must be good as s/he likes to eat and s/he breastfeeds well (TBA, 48 yrs, KII).

Each child has a specific amount of food that s/he can eat. The one who does not grow well eats too much. He eats beyond his belly capacity. But the one who grows well eats moderately; s/he does not eat too much. His/her self becomes satisfied (*nafsi yake inaridhika*). S/he is not greedy; s/he stops eating when s/he is full. [laughter] (CHW, 50 yrs, KII).

In line with the widely held belief in her community that 'good eating' indicates healthy growth, one mother said she thinks her child has been growing well because he eats every food she prepares for him:

Jackson's growth is good. He eats well. He never chooses what to eat. He is not picky. He eats everything that I prepare for him. He never hesitates to eat; he eats everything normally. He eats everything put in front of him (a mother, 42 years, IDI, farmer).

The parents of under-five children said they have expectations about the amount of food each of their children can finish, as they have studied their children's eating behavior every day. Some reported serving food to each child on a separate plate to track how much each child has been eating. Being able to finish the food provided was characterized as a good sign of growth. When asked how she could be sure her child was eating well, one of the mothers replied:

I can see myself that my child is eating well. As I feed him, I can see that he eats well. There is a particular cup that I use; it is quarter-liter of porridge. When I give him that one, he drinks all of it. If I add some porridge and give it to him, he refuses. Then I know that my child is full. So, I know his portion. If he is eating his favorite food and I realize he is eating much more than the usual amount, I stop him. I know that he is continuing to eat out of greediness (a mother, 36 years, IDI, farmer).

The participants' use of the child's eating habits as a dimension of healthy growth was embedded in their schemas regarding illness as a cause of a child's lack of appetite. Many of the parents explained that when their child eats less food than expected, it alerts them to the possibility that the child is developing an illness, particularly malaria or intestinal worms.

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I know my child Mohamed very well. When I buy him a plate of *chipsi mayai* (French fries mixed with eggs), he usually finishes it. If he eats only a small portion of it or eats less than usual, I become worried that he is getting sick. It may be intestinal worms or malaria (a father, 54 years, IDI, farmer).

4.3.4 Growing in height

Although the community members were aware of their child's height, most did not talk about height when conceptualizing healthy growth. Nevertheless, a child's stature was described as an important sign by some of the caregivers. During the interviews, a few of the parents said they determine whether their child has a healthy rate of growth by looking at whether his/her height has been increasing steadily:

Hawa is growing well. I can see that she is growing tall, while some children (in the same cohort) are not getting taller (a father, 50 years, IDI, farmer).

The lack of a concept of height in the framework of growth described by most participants seemed to emanate from their beliefs about the origin of their child's height, with many saying they feel they have no control over their child's stature. Although some of the participants indicated they are aware that having a good diet has a positive impact on growth, most said they believe a child's stature is mainly determined by God's will or heredity (more details presented in [31] i.e., chapter 5).

4.3.5 Having 'good kilos' (weight)

Most of the participants reported using weight to ascertain healthy growth in a child. They described a child who is growing well as heavy (*'ana kilo'*) or as gaining weight as she grows. Weight was also used to judge a child's growth at birth. Parents reported feeling pleased if their child's birth weight was 3kg or more.

A child grows by gaining weight... If she was born weighing 3kg and later gains up to 10kg or more, you know the child is growing (a father, FGDs).

When asked how they could tell if their child was gaining enough weight, many parents replied that they could sense the child's weight when carrying or picking him/her up: 'We use our hands to know the weight'. Tiredness when carrying a child was the main local marker caregivers used to recognize heaviness or weight gain in their child:

Tausi is growing well. Her weight is increasing nowadays. Even before going for measurements (weighing at growth monitoring clinics), I can tell. She likes to go with us to the farm. In the past, I could carry her to the farm on my shoulders without getting tired. But now, when I carry her, I feel like I have high blood pressure (a rapid heartbeat). She is a bit heavier. Her weight has increased (a father, 43 years, IDI, farmer).

When I lift him, he is heavy. If you carried him from here to Kimamba and back, the whole of your chest would be aching. He is heavy, unlike his older brother Omary. I could carry him to Ludewa and come back without feeling he was heavy (a mother, 22 years, IDI, farmer).

Although the participants related good child weight to good nutrition (*lishe bora*), many of the community members, and particularly the older women and the parents

of under-five children, said they believe that a child's weight is not always an outcome of nutrition. In their cultural context, a child's weight is ascribed to the nature of the child's bones (*mifupa*). Thus, the participants appeared to believe that some children have bones that are naturally heavy while others have bones that are light, and that the weight of the child's bones is a function of heredity and God's will. The observation that twins can have different weights at birth, or that some thin children turn out to have better *kilos* than some who are fat, were among the reasons participants cited to justify their shared schema on a child's bones. Based on this schema, some participants indicated that they believe that no matter how well a caregiver feeds a child, it is unlikely that s/he will become heavy if his/her bones are light.

The weight of a child emanates from her/his bones. You may have two children, one is thin and the other one fat, but the thin one may have much better *kilos* than the fat one. That is because of her/his bones. Even if you feed her/him with good food, s/he does not become heavy (an older woman, female FGD).

Based on their cultural schema regarding a child's bones, the participants explained that when a thin child appears to be unexpectedly heavy or when caregivers are unable to find a reason for poor weight gain in a child, the child's bones are considered to be the source of the problem:

She eats as usual. Why do her *kilos* decrease? S/he has no frequent illness, but her *kilos* decrease. In our rural context, we say this is because of the child's light bones [...] (a mother, FGDs).

The community members' interpretations of and meanings attached to weight as a dimension of healthy growth were also rooted in their cultural template regarding the etiology of poor weight in breastfeeding children. Some of the participants, mostly women, attributed low weight in a child to the parents' violation of postpartum sex taboos, including having sexual intercourse while the baby was still breastfeeding or becoming pregnant while the mother was still lactating (*'kukatikiza'*). Many of the participants said they believe a mother's breast milk can spoil if she is exposed to a man's semen or becomes pregnant while lactating, and that the breastfeeding child might therefore contract diarrhea and lose weight. Similarly, having sexual intercourse or becoming pregnant is believed to generate body heat (*joto la mwili*) or sweat (*jasho*) that can have a negative effect on the growth of the child (more details are presented in chapter 6). Based on these shared cultural schemas, picking up a child by holding her/his hands was one of the main methods the community members said they use to confirm that the parents have been adhering to postpartum sex prohibitions:

After giving birth, we do not see men until the child stops breastfeeding. That is a period of two years. He should not touch you, as the sperm and body warmth from sex affect the child. Usually, an elderly person who lives in the neighborhood comes by and says, 'My in-law, are you up? Please let me carry the baby'. She takes the baby and swings her up and down. You may think she is only playing with the baby, but she is actually checking the weight. If the baby is heavy, she says, 'Congratulations my daughter, you are indeed nurturing your baby'. If the baby is weak, she asks you, 'What are you doing to this child?' (an older woman, age unknown, retired farmer)

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In addition to the cultural meanings attached to a child's weight, the participants demonstrated knowledge of growth in line with the biomedical model. Many reported getting information about their child's weight through growth monitoring clinics. Unlike the fathers and the older women, the mothers of under-five children and the key informants (i.e., the community health workers and the TBAs) demonstrated some comprehension of the growth chart (clinic card). In ascertaining healthy growth, some of the participants said they pay attention to the monthly weight gain as recorded by the health worker. Most of the participants referred to the color of the area where the child's weight is marked on the growth chart, with a mark in the green-shaded area indicating healthy growth, and a mark in the gray-or red-shaded area indicating poor growth:

You find that a particular child is seven and a half kilos this month, and when you measure her/him again next month, you find that s/he is eight kilos. That shows that her/his weight has increased. You then realize that this child is growing well (CHW, 40 yrs, KII).

You can tell if a child is growing well. For instance, when we go to the (CGM) clinic and measure her/him, you can see. There are three colors: there is a gray color, a green color and a red color. So, if you see that s/he is in a green color, you know that this one is in good health. But if you find him/her in a gray color, then you know that her/his growth is not good. There are three colors; the red one is the most dangerous one. It indicates that this one is not in good health (TBA, 48 yrs, KII).

I can easily see if a child is growing well as I measure them during CGM clinics. You find that a child goes to the green color. S/he never drops into the gray or the red color. Thus, that vividly shows that the growth of that child is going well (CHW, 50 yrs, KII).

However, the participants did not seem to understand the grading of the colors in the growth chart, as they did not refer to the gray color as an indication of obesity, but instead said it signified the onset of weight loss. They also described the red color as reflecting the critical stage of weight loss. The participants' individual schemas of the color in the growth chart as a marker of child growth was influenced by their experiences with CGM services:

When your child reaches the gray color, it indicates danger, as it shows that her/his *kilos* are starting to go down. If the child drops further and reaches this color (pointing to the red-shaded area of her child's growth chart), it shows that the child has *utapiamlo* (malnutrition). That is what the red color indicates. That is why they tell us to be vigilant about the two colors (i.e., gray and red) (a mother, 22 years, IDI, farmer).

4.3.6 Contradictions between cultural and biomedical assessments of healthy growth

Despite the caregivers' knowledge and use of the CGM weighing services, they seemed to rely on local markers in interpreting the growth of their child. Based on their cultural constructs of healthy growth, they could guess their child's growth status prior to attending the CGM clinics, and thus used the outcome of the weighing procedure to

confirm their initial hunch. Some of the caregivers said that when the CGM results contradicted their expectations, they felt frustrated. For instance, one mother of an under-five child who said she believed that her child was growing well based on a number of cultural markers of healthy growth recalled being confused by the results when she took her child to the CGM clinic:

My child had a good body, she was never ill. Her body was initially small, but she then became fat. So, I was pretty sure when I took her to the clinic today that her *kilos* (weight) had increased. But when she was measured, my child was found to have lost weight. That confused me, I felt bad [...] (a mother, FGDs).

Although the caregivers expressed positive attitudes towards CGM, their reliance on cultural markers in tracking their child's healthy growth seemed to mediate their uptake and utilization of CGM services, particularly after the child had completed his/her vaccinations, usually at 18 months. As one community health worker during KII noted: 'When a child completes the vaccinations (*chanjo*), many stop attending clinics; they perceive it as no longer meaningful'. When asked why they had missed some of their child's CGM scheduled appointments or stop attending clinics before their child reached age five, the mothers gave responses such as '*nilidharau tu*' (I just ignored it), '*ni uvivu tu*' (It is just laziness), '*sina sababu ya msingi*' (I do not have any good reason). When probed further, the mothers typically explained their behavior with statements such as 'I see that my child is doing well', 's/he plays well', 's/he eats well', 'I see that s/he is healthy', or 's/he is not sick' (*haumwi*). All of these reasons reflect cultural markers of healthy growth:

P: I was taking him to [the clinic] for weighing (*kupima*) until he turned one and a half years old. When a child is one and a half years old, there is a certain injection (vaccine). Those (vaccinations) are very important, as they are the *kinga* (prevention against diseases). When we reach that time (18 months), most of us despise the clinic (*tunaidharau*). Sometimes you go, sometimes not.

I: Why did you stop taking your child to the clinic after completing the vaccinations?

P: I just despised it because I see that my child is playing perfectly well. [...]. She is okay and is not sick (*Yuko safi haumwi*) (a mother, 36 years, IDI, farmer).

The above shows how the broader systems of cultural meaning inform caregivers' perceptions about the growth of their child and influence their behavior and decisions in relation to their child's growth.

4.4 Discussion

The aim of this study was to explore caregivers' local conceptualizations of healthy growth, and to examine the meanings they attach to the markers used in identifying healthy growth in a child. Understanding the meanings and schemas that underlie caregivers' conceptualizations of healthy growth could be useful for the improvement of CGM and other childcare services, as the beneficial schemas can help health professionals develop strategies for promoting healthy growth, while the harmful schemas can alert them to issues that may call for intervention [32].

4.4.1 Medicalization of cultural schemas of healthy growth

The study results show that the caregivers ascertained healthy growth in their children using multiple indicators, and that in applying each of these indicators, they referred to specific local markers. While much of their knowledge of and schemas regarding healthy growth were embedded in their broader systems of cultural meaning, the study participants also integrated ideas derived from biomedicine into their local knowledge and practices. They appeared to be aware of several biomedical signs used to assess growth in young children, such as weight gain and the colors in the child's growth chart. However, both red and gray colors were interpreted as indicating 'low weight'. Since the 1970s, Tanzania has been integrating into its pediatric care growth monitoring practices based on WHO's growth charts. Thus, it is not surprising that the caregivers in our study appeared to have some knowledge of the biomedical markers of child growth. However, although the caregivers used biomedical concepts in their local conceptualization of growth, the meanings they attached to these concepts were largely embedded in their cultural framework. For instance, whether a child had a poor or a good weight was ascribed to the nature of the child's bones and the parents' adherence to postpartum sex taboos. The belief that the parents' non-adherence to postpartum abstinence causes weight loss in infants has also been reported in other qualitative studies conducted in Tanzania [33]. The schema that a child's weight is a function of his/her bones can cause caregivers to fail to recognize the risk of overweight or underweight in their child, and thus to avoid seeking help. To ensure that caregivers are paying attention to their child's weight, health workers should educate mothers during CGM clinics that a child's weight is mainly a nutritional issue. Furthermore, improving caregivers' comprehension of the message in the growth curve in relation to the growth of their children is important, as it can influence their behavior and decisions related to healthy child growth.

4.4.2 Body fat and child growth

The cultural norms regarding ideal body size shaped the participants' conceptualization of healthy child growth, and the participants referred to a child who was growing well as *bonge* (chubby). In most of their accounts of healthy growth, they used the word 'health' (*afya*) interchangeably with the word 'fat'. When asked to describe a child who was growing well, the participants spontaneously said 's/he is healthy' (*ana afya*); which means the child 'is chubby'. In their context, a fat child was considered beautiful, and fatness was described as an indicator of good health and a higher level of parenting competence. Fatness was also used to ascertain healthy growth at birth. The idea that fatness is a sign of attractiveness, affluence, and good health has also been reported from other settings [32,34]. The study participants' use of a big body size as a marker of healthy growth at birth could be encouraging given the higher probability of survival of large babies than of small babies. In Tanzania, for instance, more than 80% of neonatal deaths occur among children with low birth weight [8]; and children who are small at birth are more likely to become stunted than those described as being average or large [1]. Nevertheless, the cultural preferences for a large body size in children should be viewed cautiously, as such beliefs can encourage child feeding practices that can lead to childhood obesity, which is particularly relevant given that Tanzania is currently experiencing a double burden of malnutrition [6]. Moreover, as Quinn [35] and Bailey et al. [32] have observed, cultural schemas are a necessary part of individual actions, but they are not always beneficial. For example, the negative stereotypes about children with a small body size found in this study represent harmful schemas that, if left unaddressed, can not only cause distress and stigma for caregivers with thin children, but can cause them to pressure their children

to eat [36] and to provide their infants with developmentally inappropriate nutrition, including the early introduction of solids and/or table foods [37–39]. Our findings have implications for programs directed at reducing levels of childhood obesity, as defined by WHO. In order to be effective, programs targeting childhood obesity need to be aligned with cultural interpretations of fatness in a child. Similarly, the integration of the concept of obesity into the awareness messages to mothers may lead them to adjust their perceptions of a large body size in a child.

4.4.3 Freedom from illness: A gauge of healthy growth

In this study, the participants commonly referred to illness, and particularly malaria, when ascribing meanings to their cultural markers of healthy growth. The pervasiveness of this association may have been influenced by the country's stage in the epidemiological transition, and the high prevalence of malaria infection in Morogoro [1], the region where this study was conducted. In Tanzania, malaria remains the leading cause of morbidity and mortality for under-five children and pregnant women [1,9,40]. A child's resistance to malaria infection was spontaneously mentioned as an important marker that led caregivers to assume that the child was growing well. If their child went for long periods of time without a malaria infection, the parents saw this as a sign of good growth. The finding that healthy growth was often tracked using a child's resistance to infections is an important message. It indicates that poor child growth can be addressed by raising awareness of how to prevent infections, and by encouraging parents to seek treatment for their child if s/he becomes sick.

The majority of parents who participated in the in-depth interviews said they believe their child is growing well if s/he usually has an ordinary fever/malaria [*homa/malaria ya kawaida*]. The cultural naming of 'febrile illness' or 'uncomplicated malaria' as *homa/malaria ya kawaida* has also been reported by previous ethnographic studies and other studies conducted in Tanzania (cf. [41–45]). However, its use as an emic marker of healthy child growth has not been mentioned previously. The interpretation of mild illness as an 'ordinary fever' has important implications for treatment [46]. In this study, for example, the meanings attached to *homa ya kawaida* as a marker of healthy growth seemed to contribute to the caregivers' tendency to delay seeking help; and to the widespread use of self-medication, particularly painkillers (Panadol), as an initial treatment for a fever. These findings can partly explain the current low uptake of treatment at health facilities among rural children with fever (1), and can be related to the results of other studies in Tanzania. It has, for instance, been shown that in Tanzania, a majority mothers delay taking their child to dispensaries after the onset of a fever based on the belief that their child has *homa/malaria ya kawaida* [42], and instead rely on self-medication [41,42,47,48]. However, in other parts of Morogoro region, the failure to seek prompt and appropriate malaria treatment for children has also been ascribed to issues of affordability, the absence of trusted medical professionals, the unavailability of diagnostic instruments, long waiting times, and long distances [49]. Our study findings suggest that for Tanzania to achieve the global and country targets of reducing the prevalence of child stunting from the current 34% to 28% by 2021, reducing malaria deaths by 80.0% from 2012 levels [9], and achieving Sustainable Development Goal 2 and 3 (improving nutrition and ensuring healthy lives for all), greater community awareness about the importance of the timely diagnosis of malaria and the effective biomedical treatment of the disease is needed.

4.4.4 Conceptual differences between growth and height

The present study revealed conceptual differences between the biomedical model and the participants' perceptions of a child's height. While the biomedical perspective considers height to be an outcome of growth, the participants indicated that they believe that height is not related to nutrition, and that they have no control over their child's height. The differences in the concepts regarding growth and height in the accounts of the local people in this study and in the biomedical model are consistent with those found in previous research conducted in Guatemala [22] and in rural Mexico [15]. The lack of a concept of height within the framework of growth of most of the participants of the current study seems to emanate from their cultural schemas on the origin of height, as they appear to view a child's stature as the result of God's will (*Mpango wa Mungu*) or as function of heredity (For more information, see [31]). This schema is indicative of a failure to recognize nutritional stunting among the caregivers in the study setting, which is of great concern given the high prevalence of childhood stunting in the country [1,3]. As a strategy for improving caregivers' ability to recognize height deficits as manifestations of malnutrition, Turnbull [15] has recommended integrating the concept of stunted (linear) growth into the awareness messages. While we agree with this suggestion, we would argue that it may take a long time for an emphasis on height to positively affect caregivers' mindsets, given that the cultural schemas and meanings are shared, created, and performed within the wider community [32], and are thus difficult to change [28]. Basing on our findings, we suggest that Public Health Professionals (PHPs) could be more effective in improving linear growth among children by building upon beneficial schemas held by caregivers. For example, based on the cultural knowledge that a child's resistance to illness and ability to eat well indicate healthy growth, the PHPs could develop messages that will help them give culturally embedded advice to caregivers about good child feeding practices, about approaches for dealing with their child's lack of appetite, and about the need to seek early diagnosis and biomedical treatment when a child becomes ill.

4.4.5 A blend of biomedical and cultural knowledge

The participants appear to have adapted to different sources of available information in making sense of their children's growth. In line with the biomedical model, they reported paying attention to their child's body weight, as they seem to believe that being heavier (*kilos*) is an indicator of good growth and good care by the parents, including of the parents' sexual abstinence during the postpartum period. They also judged whether a child was growing well by applying cultural markers, including whether the child was chubby, had good eating habits, and was free from illness. In this case, the weighing of their baby was seen as simply providing reassurance that all was well. Thus, when the CGM results contradicted their earlier expectations, the caregivers reported feeling frustrated and worried about the growth of their child. Concerns among mothers about their baby's weight fluctuations have also been reported in other ethnographic studies [39]. The findings of this study further show that after their child had received the important vaccinations, the caregivers tended to abandon the CGM clinics, and resorted to using their cultural markers to ascertain whether their child was displaying healthy growth. This tendency is of great concern, given that in Tanzania, many child health care services are channeled through GM clinics.

The results of this study suggest that the communities in which CGM services are implemented, are not ‘empty vessels’ [50]; but have relevant knowledge about and skills in tracking the growth of their children based on their cultural framework. Therefore, when appropriate, it is important to give caregivers explanations that make sense to them based on their unique frame of reference. The observed tendency of caregivers to stop going to CGM clinics after the vaccination period, and to instead rely on cultural markers of healthy growth, highlights the danger of being blind to the cultural context when developing local interventions. As Hahn and Inhorn [50] have cautioned, ignoring the cultural context may lead recipients to reject the PHP’s advice, either because they do not understand it, or because they give it a relatively low priority. To optimize the communication between caregivers and health workers during the CGM clinics, we would argue, along with Turnbull [15], that PHPs should demonstrate cultural competence by using growth monitoring tools that acknowledge caregivers’ constructs of child growth, while complementing them with anthropometric indicators. The recognition of caregivers’ constructs of child growth may create a sense of ownership and improve caregivers’ uptake of CGM services, which could in turn encourage the utilization of important services that can help children achieve optimal growth.

4.5 Conclusions

The study was conducted in a single village, and the data were collected from a small group of participants. Thus, our sample size was not large enough to allow us to make conclusive statements that go beyond the research setting. Even so, because this study was conducted in a multi-ethnic setting, it is possible that the perspectives expressed by the study participants on healthy child growth are similar to those held elsewhere in the country, or even beyond the borders of Tanzania.

This study has shown that caregivers’ conceptualizations of healthy growth are largely rooted in their cultural meaning systems. Accordingly, for health workers to provide advice to mothers during CGM appointments that is sensitive to their specific context, a tool that takes into account the mothers’ constructs of healthy growth is needed. The lack of a concept of height in the participants’ framework of healthy growth is of great concern given the high prevalence of childhood stunting in the country. PHPs should use the study’s findings to take advantage of the beneficial schemas held by caregivers to promote linear growth, rather than simply height. The cultural construction of ‘uncomplicated malaria’ as a gauge of healthy child growth reflects the normalization of this life-threatening illness, which may hinder prompt malaria treatment and contribute to the low utilization of biomedical treatment for children who are ill. To improve the effectiveness of large-scale malaria control programs in Tanzania, and to encourage healthy child growth, PHPs should pay closer attention to the socio-cultural knowledge and meanings attached to symptoms of malaria [42,43].

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Chapter 5

“A child may be tall but stunted”: Meanings attached to childhood height in Tanzania

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Chapter 5. Meanings attached to childhood height

Abstract

Stunting affects large numbers of under-fives in Tanzania. But do caretakers of under-fives recognize height as a marker of child growth? What meanings do they attach to linear growth? An ethnographic study using cultural schemas theory was conducted in a rural community in Southeastern Tanzania to investigate caregivers' conceptualizations of child height in relation to growth and the meanings attached to short stature. Data for the study were collected through 19 focus group discussions, 30 in-depth interviews, and five key informant interviews with caregivers of under-fives, including mothers, fathers, elderly women, and community health workers. Principles of grounded theory guided the data management and analysis. Although caregivers could recognize height increments in children and were pleased to see improvements, many held that height is not related to nutrition, health, or overall growth. They referred to short stature as a normal condition that caregivers cannot influence; that is, as a function of God's will and/or heredity. While acknowledging short stature as an indicator of stunting, most participants said it is not reliable. Other signs of childhood stunting cited by caregivers include a mature-looking face, wrinkled skin, weak or copper-coloured hair, abnormal shortness and thinness, delayed ability to crawl/stand/walk, stunted IQ, and frequent illness. Culturally, a child could be tall but also stunted. Traditional rather than biomedical care was used to remedy growth problems in children. Public health programmers should seek to understand the local knowledge and schemas of child stature employed by people in their own context before designing and implementing interventions.

Keywords: child growth, height, malnutrition, short stature, stunting, Tanzania

5.1 Introduction

Childhood stunting (low height-for-age) is a growing public health problem, particularly in Sub-Saharan Africa (SSA). It is estimated that 36% of all stunted children worldwide live in this region (UNICEF, 2016). Due to population growth, trend analyses for the SSA in general and East Africa in particular show the number of stunted children increasing through 2020 (Afnan-Holmes et al., 2015; de Onis & Branca, 2016; Nordang, Shoo, Holmboe-Ottesen, Kinabo, & Wandel, 2015). Tanzania is ranked third among the SSA countries in childhood stunting (Semali, Tengia-Kessy, Mmbaga, & Leyna, 2015; UNICEF, 2016), despite a reduction from 48% (1996) to 42% in 2010 (Tanzania Demographic and Health Survey [TDHS], [National Bureau of Statistics, ICF Macro, 2011]). Nationally, chronic malnutrition or stunting affects 34.7% of children under the age of five (TDHS–MIS, 2015–2016). Within the country, there is considerable variation in stunting between rural and urban settings, between zones, and between regions (ibid). The evidence indicates that stunting prevalence is higher in rural communities (39%) than urban communities (30%) (TDHS, 2010; TFNC, 2014; UNICEF, 2016) and is very high in the Southern Highlands (45%) and the South West Highlands (43%) (TDHS–MIS, 2015–2016). In three regions, more than half of children are chronically malnourished: Rukwa (56%), Njombe (49%), and Ruvuma (44%; ibid). Overall, more than 2.7 million children under age five in Tanzania are stunted, and one in six children aged 24–35 months is severely stunted (ibid).

Stunting begins in utero and continues through early childhood (de Onis & Branca, 2016; Victora et al., 2008). Stunted children are known to become short adults (de Onis & Branca, 2016; Dewey & Begum, 2011). Stunting is associated with increased child morbidity and mortality (Semali et al., 2015), poor cognition and educational performance, low adult wages and lost productivity (de Onis & Branca, 2016; Kar, Rao, & Chandramouli, 2008), impaired behavioural development in early life (Hoddinott, Alderman, Behrman, Haddad, & Horton, 2013), delayed development of motor skills (Brown & Pollitt, 1996), and chronic disease risk in adulthood (Adair et al., 2013; Dewey & Begum, 2011; Smith & Haddad, 2015; Victora et al., 2008). Stunted girls are more likely to give birth to low-birth weight children (Bisai, 2010; Britto et al., 2013). Recent evidence suggests that stunting in childhood is not associated with metabolic syndrome components in young adults (Grillo, Gigante, Horta, & de Barros, 2016).

Linear growth (an increase in the length/height of a child) is considered as the best overall indicator of child well-being, providing an accurate marker of inequalities in human development (de Onis & Branca, 2016). The objective of routine growth monitoring is the early detection of growth failure to allow for timely interventions and the prevention of further growth failure (Hasegawa, Ito, & Yamauchi, 2017; Hossain et al., 2018). The evidence suggests that the early detection of future stunting (i.e., the identification of high-risk children at an early stage) is crucial step for preventing malnutrition (Hasegawa et al., 2017). Yet the health care systems in most countries with a high prevalence of stunting, including Tanzania, have been focusing on the routine monitoring of weight, rather than linear growth (de Onis & Branca, 2016; Ruel, Rivera, & Habicht, 1995). This practice may contribute to the lack of awareness among families, health workers, and policymakers of the magnitude and the consequences of stunting as a public health issue (Dewey & Begum, 2011).

In Tanzania, several studies on determinants of undernutrition have been conducted (Chirande et al., 2015; Hadley, 2005; Howard, 1994; Nordang et al., 2015; Sellen,

1999; Semali et al., 2015). These studies however, do not explain how community members conceptualize height or the relationship between short stature and child growth. Similarly, although the first step in preventing and treating stunting is to identify it as a problem (de Onis & Branca, 2016), the extent to which caregivers understand linear growth and are able to identify stunting remains unclear. Parents' levels of concern about their children's growth and their willingness to take action greatly depend on their interpretations of growth indicators. Therefore, understanding the caregivers' perceptions of child height—particularly short stature—in relation to growth is an important step towards addressing childhood stunting.

Key messages

- To develop effective interventions targeting linear growth, it is important to understand “local” definitions of child stature, as well as what “stunting” as a concept means to the community and how it is used.
- The use of the term kudumaa in counselling mothers about stunting may not send a clear message that will motivate mothers to invest in taking action to encourage the linear growth of their children. Health professionals would have a greater impact if they used the specific term ufupi (short stature) when referring to stunting.
- It is crucial to find ways to inform caregivers that short stature is a nutrition-related problem and that linear growth is associated with adequate care.
- A comprehensive educational approach that combines the knowledge and cultural frameworks of both caregivers and health care providers is needed to overcome growth deficits among under-five children.
- Engaging local resources, such as religious leaders and traditional healers, is crucial to the utilization and sustainability of stunting reduction interventions.

This study employed a cognitive anthropological perspective on cultural meaning systems (cultural schema theory) to investigate caregivers' perceptions of child height in relation to growth and the meanings they attach to short stature. Cultural schema theory was developed by cognitive anthropologists (D'Andrade, 1984; D'Andrade & Strauss, 1992; Strauss, Quinn, & Meeting, 1997). D'Andrade (1984) argued that a community's cultural meaning systems are composed of shared cultural schemas, including mental constructs, which form the reality-defining system of the human and provide information about what states of the world can be and should be pursued. Schemas may include beliefs, perceptions, emotions, goals, values, and discourses (D'Andrade & Strauss, 1992; Hill & Cole, 1995).

These schemas are therefore context-specific interpretive devices (D'Andrade, 1984) that facilitate the creation of knowledge and the attribution of meaning to objects (Metta et al., 2015). Thus, how a certain health condition is conceptualized (e.g., short stature) depends on each community's cultural meaning systems (ibid). Strauss et al. (1997) stated that schemas exist for all kinds of phenomena (including child growth) and are embedded in broader systems of cultural meaning. By applying a cognitive anthropological perspective on cultural meaning systems in different contexts, such as diabetes (Metta et al., 2015), HIV/AIDS (Bailey & Hutter, 2006), and complementary feeding (Monterrosa, Pelto, Frongillo, & Rasmussen, 2012), scholars have been able to understand the meanings given to symptoms of a particular health

condition/child feeding practice and how these meanings inform people's behaviour and care practices.

In the context of the current study, the wider community's cultural meaning systems or schemas inform caregivers' beliefs, perceptions, and behaviour, including those related to linear growth in their children. Consequently, we assume that whether caregivers seek help in treating the linear growth deficits of their children depends in part, on how their communities interpret and ascribe meaning to short stature in children. Thus, understanding the schemas and meanings caregivers attach to height and short stature in children is essential to developing effective interventions.

5.2 Methods

5.2.1 Study setting

The fieldwork was conducted in Kilosa, the largest of the six districts of the Morogoro region located in Southern Tanzania, with an area of 14,918 km² and a population of 438,175 (218,378 males and 219,797 females), according to the 2012 National Census (National Bureau of Statistics, 2012). In collaboration with the Kilosa district administration, one village (Malangali village) in the district was chosen for the study based on its rural location, which typifies the general context of the Kilosa district. As in the majority of villages in Kilosa and in the Morogoro region in general, subsistence farming, including crop cultivation (mainly rice and maize) and livestock keeping, is the main economic activity of the study population. With its fertile land and weather conditions conducive to agriculture, the study village, like other parts of Kilosa, attracts many internal migrants. Two main ethnic groups exist in the study village. The first is the native Bantu group, to which the majority of the population belongs. The Luguru, Sagara, Kaguru, and Pogoro people are in this group. Other minority Bantu ethnic subgroups that have migrated to and settled in this area include, inter alia, the Sukuma, Nyamwezi, Zaramo, Gogo, and Hehe people. The second is the Maasai group, which is a Nilotic minority group of people who migrated to this area in the past two decades in search of pasture for their livestock. The majority of people in the village live in small traditional houses with mud walls, earth floors, and grass roofs. The majority use firewood as the main source of energy to prepare their meals. As the village has no electricity, most use paraffin as a source of light. Many village residents have primary education only.

5.2.2 Health services

The study village is poorly served in terms of health infrastructure. Because there is no local health facility, the people in the village depend on health services from other villages outside of the ward, which are approximately 3–6 km away. The village has a limited transport infrastructure. The roads are poor and are passable only during the dry season. Moreover, there is no public transport connecting the village with Kilosa town and neighbouring villages. Thus, accessing health services can be challenging for the residents. Within the village, there are two small privately owned drug shops (*maduka ya dawa*), both of which are operated by unqualified attendants who offer a variety of medications, including antibiotics and antimalarials, mostly without prescription. Due to the lack of health facilities in the village, child growth monitoring services (mainly weighing) are offered monthly in a meeting room of the village office (*ofisi ya kijiji*) by two trained community health workers (CHWs), who are both standard seven leavers. Generally, the CHWs are trained according to government standards to provide an integrated and comprehensive package of interventions,

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including health promotion and education, disease prevention, referrals, basic curative services, rehabilitative services, and surveillance.

The CHWs in the study village are paid a small monthly allowance of 40,000 Tanzanian shillings (equivalent to 18 USD per month) by the village government. In general, the meeting room of *ofisi ya kijiji* is not conducive to providing growth monitoring services, as the room is too small to accommodate mothers and their children and has no facilities for them to sit while waiting to receive services. Thus, during GM visits, mothers and their babies sit outside of the building waiting to receive services, which can expose their babies to the elements, including the sun, wind, and rain. Moreover, because the office is used for both GM and village government activities, the schedule of the GM clinics can sometimes be disrupted by village government meetings, causing mothers and babies to wait for several hours to be served.

5.2.3 Study design

Our ethnographic study was conducted to explore community members' perceptions of the relationship between child height and growth and the meanings they attach to short stature in children. Focus group discussions (FGDs), in-depth interviews (IDIs), and key informant interviews (KIIs) were used to collect data for the study. The design of the questions in the FGD and interview guides reflected the concepts that are embedded in the research questions and the cultural schemas theory. The guides were then pilot tested in a community outside of the study village, and the questions that did not seem to be clear or relevant to the interviewees were rephrased. During actual data collection, the guides were moderately rephrased to include more probes and to adapt the concepts/words to the context of the participants.

Data for this study were collected in two separate rounds. The first round (July to September 2015) involved FGDs. The information gathered from the FGDs was used to contextualize the IDI and the KII question guides, which were then used in the second round of data collection (August to September 2016). The IDI guides were also adapted to address the gaps identified in the information obtained through the FGDs. In addition to providing detailed information on the caregivers' personal views about height and short stature in children, the IDIs helped researchers validate the information generated through the FGDs and address the gaps identified in the data collected during the first round of fieldwork. FGDs facilitated researcher's access to the community and enabled them to gather data on participants' perceptions of short stature in relation to child growth. The IDIs and KIIs allowed the researchers to explore in detail the caregivers' views on child height in relation to child growth and the meanings they attach to short stature.

5.2.4 Data collection and participants' recruitment

Data were collected through 19 FGDs, 30 IDIs, and five KIIs (see Table 4 for participants' information). Two researchers were involved in the data collection process: the principal researcher and a trained Tanzanian female research assistant with a postgraduate background in sociology. The researchers had advanced training in qualitative methods and extensive experience in qualitative data collection procedures. To enhance the research assistant's efficiency, she participated in the process of defining the research topic, the fieldwork logistic, and the pilot study. The research assistant supported the principal researcher in taking field notes during the

FGDs. All of the FGDs and interviews were conducted in Swahili, which is the local language spoken by the participants and the researchers. The moderator and the note taker held debrief sessions after every FGD. Although a majority of the IDIs took place at participants' homes, the FGDs were conducted in different venues in the village, such as school classrooms and the principal researcher's and the participants' home compounds.

Data collection was ended when no new information related to the interview questions was emerging. All of the interviews and FGDs were audio recorded using a digital recorder and were transcribed verbatim. Throughout the fieldwork, the principal researcher and her assistant took field notes of what they observed and heard, and they later expanded the notes into detailed descriptions. To initiate the discussion, the FGD participants were asked about community opinions on ideal child growth and were probed on a number of markers (including height) used in assessing healthy growth. Thereafter, they were asked about community perceptions regarding height in relation to the health/growth of a child and their interpretations of short stature in children and the determinants of a child's height. During in-depth interviews, the study participants were asked about their personal views and experiences regarding what a healthy/unhealthy child looks like and how they can tell that a child is growing well. Specifically, the parents of under-five children were asked to provide their views on the health and growth of their individual under-five child.

The parents who reported that their child was growing well were asked to justify their judgement. To solicit detailed information regarding their perceptions of linear growth, the participants were further probed on their personal views regarding height in relation to the health/growth of a child; their interpretations of short stature in a child, their views about the determinants of height in a child, and the difference between short stature and *kudumaa* (see Appendix 2-6). Question guides with open-ended questions and probes (see Appendix 2-6.) were used to capture individual caregivers' conceptualizations of height in relation to growth and their personal views on short stature in children. When conceptualizing child growth and stature in particular, the FGD participants routinely mentioned *kudumaa* (local term for stunting). This prompted the researchers to probe their knowledge of the markers and causes of childhood stunting.

The participants in the FGDs and the IDIs were (a) mothers and fathers who had under-five children, regardless of their nutritional status and (b) elderly women aged 45 years and older. Community health workers (CHWs) and traditional birth attendants were interviewed as key informants. Purposive sampling was used to recruit different types of participants. The mothers and fathers who participated in the FGDs were identified with the guidance of village leaders and other relevant gatekeepers. A majority of the IDI participants were identified with the help of community health workers and through researchers' social networks. Key informants were approached based on their experience and knowledge of issues relevant for this research. The recruitment of participants continued up to the point of data saturation, when no new information in relation to the study interest was obtained from the interviews.

5.2.5 Data analysis

All transcripts were analysed in Swahili, the original language and the mother tongue of the principal researcher and the research assistant, in order to preserve linguistic authenticity (Richards & Morse, 2007). Principles of grounded theory, as described by A. Strauss, Corbin, and Corbin (1998), guided the data management and analysis. While in the field, the principal researcher wrote brief notes about the analytical concepts that emerged from day-to-day encounters. This allowed for the validation of concepts as they were being developed (ibid). The data transcription was done by the researchers and one hired transcriber. After the data transcription was completed, the principal researcher read the transcripts to identify the initial categories and to crosscheck the analytical concepts that emerged during the fieldwork. The words/phrases/paragraphs that captured the emerging issues were coded. The categories that arose from the transcribed data and the concepts that emerged during data collection formed the initial coding scheme. The patterns and the relationships between the categories were identified, and main themes were synthesized, which reflected the local conceptualizations and meanings attached to childhood height and short stature. Five categories emerged from the data: (a) height in relation to child growth, (b) the classification of short stature, (c) stature as a normal condition given at birth, (d) the cultural markers of stunting, and (e) cultural explanations for the aetiology of stunting (See Table 5, a summary of themes with illustrative quotes). Thereafter, a codebook with a description of what each code entails was developed. The codebook was then discussed among the PI and her two supervisors (third and fourth authors) and was refined after a unanimous consensus was reached (see Appendix 9). The principal researcher then imported the transcripts to NVivo 11 software (QSR International Pty Ltd, Australia), which was used to facilitate the data analysis. She coded the data and then wrote a descriptive report. Additional data from field notes were used to clarify and expand the meanings cited by the caregivers.

Table 4 Characteristics of focus group discussion, in-depth interview, and key informant interview participants

Activity	Number of the activity	Age range	Date of interview	Gender		Level of education	Inclusion criteria	Total
				Male	Female			
FGDs	19	18-74	July–September 2015	39	98	0 – form IV	Mothers and fathers who had under-five children, regardless of their nutritional status Elderly women aged 45 years and older	137
IDIs	30	17 – 71	August–September 2016	11	19	0 – form IV	Mothers and fathers who had under-five children, regardless of their nutritional status Elderly women aged 45 years and older	30
KIIs	5	39-50	August–September 2016	1	4	0 – standard 7	Community health workers and traditional birth attendants	5

Note. FGDs: focus group discussions; IDIs: in-depth interviews; KIIs: key informant interviews.

5.2.6 Ethical approval

The study obtained ethical approval from both the Groningen University Research Ethics Committee and the Tanzania Ministry of Health, Community Development, Gender, Elderly and Children through the Medical Research Coordinating Committee of the National Institute for Medical Research. The researchers also contacted local leadership for permission to conduct this study in their administrative areas. Verbal or written/thumbprint informed consent was obtained from all participants prior to their participation. The participants' anonymity was assured through the use of pseudonyms during the fieldwork. All identifiers were removed from the transcripts during the data-cleaning process.

5.3 Results

5.3.1 Height in relation to child growth

In this study, some of the caregivers and particularly the older parents of under-fives and the community health workers, mentioned height as one of the markers they use to track healthy child growth (more findings are presented in chapter four), but some did not see any link between stature and growth:

Height is not related to growth (ukuaji). Height is height and growth is growth. Somebody may be tall, but his/her growth have plenty of [health] problems.

Tallness or shortness does not relate to growth at all. They are two different things. (Father, 43 years, IDI, farmer).

Similarly, although the community members indicated that they are aware of their children's height and are pleased to see them grow taller, most of the participants and particularly the women and the fathers of under-fives, said they believe that—in contrast to weight— height is not related to health and cannot be improved by nutrition, as height is mainly determined by hereditary and/or God's design. Thus, they observed, a child can be tall and yet still have health problems.

There is no relationship between height and a child's health. I may be born short, but when they measure my weight, they may find that I am even heavier than the tall one. (Mother, FGD-#01).

I: Does a child's height have any relationship to her health?

P: Not at all! A child can inherit shortness from her clan members, but s/he is healthy if s/he does not have diseases. That is how I see it. Being tall does not mean having good health. Not at all! You can be tall but not have good health [...] (Father, FGD-#03).

It therefore appears that in the participants' cultural model, aspects such as “being free of illness” and having a healthy weight are more important markers than height in defining what “being healthy” means. Additionally, the absence of a concept of height in the model of health and growth used by the participants is based on a shared schema that “height” is not an aspect of growth over which caregivers have control. Although some caregivers incorporated height increment into their conceptualization of healthy growth, the general understanding of the ideal height for a child was vague:

I: “What can you say about height in relation to the growth of a child?”

R: “A child is supposed to have good growth. S/he should not be too short. S/he should have an average height. S/he should not be extremely short.” (KII, CHW, 40 years).

I: “What can you say about the height of your child (name) in relation to her growth?”

R: “She is growing well. She has an average stature. She is not tall. She has a normal height.” (Father, 54 years, IDI, farmer).

5.3.2 Classification of short stature (UFUPI)

Regardless of their age, religion, or ethnicity, the participants frequently pointed out that short stature (*ufupi*) does not always indicate poor child health/growth. They provided two specific classifications of short stature in children that reflect their cultural constructs (See Table 6). In their view, there is “normal short stature” (*ufupi wa kawaida*) and “stunted stature” (*ufupi wa kudumaa*). Unlike *ufupi wa kudumaa*, which is linked to ill health, normal shortness is referred as natural (*ufupi wa asili/ufupi wa kuzaliwa*). “*Ufupi* and *kudumaa* differ, as *ufupi* is natural while stunting is an illness.” (Father, FGD-#02).

Normal shortness was also commonly referred as God's shortness (*ufupi wa Mwenyezi Mungu*). According to their cultural template, a seemingly short child is considered to be of normal height provided she/he is chubby (*ana mwili*), is smart, is active (*amechangamka*), is playful, has a baby face, and is not frequently ill

(*haumwiumwi*). Other markers that a short child is healthy cited by the participants are that the child is cheerful, weighs enough (*ana kilo*), crawl/stand/walk on time, and has good skin. Distinguishing between normal shortness and stunting, participants explained:

There is a big difference between natural or normal shortness and kudumaa (stunted stature). A child with biological shortness usually looks fat; her/his health is good. You can clearly see that this one is short but is in good health. But the shortness of a child who is stunted is different. (Father, FGD-#02)

The one with God's shortness is active (*kachangamka*), but the other one (with kudumaa) is not active. (Elderly woman, IDI, age unknown)

Table 5 Result themes according to codes, description, and illustrative quotes from caregivers from rural Southeastern Tanzania

Theme	Description	Codes	Illustrative quotes
Height in relation to child growth/health	Caregivers' knowledge and opinions on the relationship between height vs. health and child growth.	Height in relation to growth/nutrition	<p>"Shortness does not mean that a child is not growing well. Not at all! It is just how God creates them (children). Some are tall and some are short. Some are fat and some are thin. So, I do not see any reason to say that a short child lacks good care or is not growing well." (mother, FGD-#04).</p> <p>"Similar to what my fellows earlier said, height does not have any relationship with growth. It is just God's will. Look at me, I am short, does it mean that I am not eating rice (ubwabwa) [laughter]. If God says, 'let this one be short, tall, or extremely short, you will be so. It is just his will. It does not mean you lack good nutrition. If the child had not been eating, s/he would have been dead. There is no relationship between height and lishe (nutrition). No matter how much you feed her/him (child), s/he will not grow tall.'" (mother, FGD-#02).</p> <p>"You find that both the child's father and mother are short. The child cannot grow tall no matter how they feed him/ her." (elderly woman, FGD-#04).</p>
		Height in relation to health	<p>"With regard to health, height (kimo) is not about health. You can be short but have good health, which makes you totally different from a tall person. Being short does not mean you lack good health, and being tall does not mean you have good health." (father, 48 years, IDI, farmer).</p>
Classification of short stature (ufupi)	Cultural construction of the types of short stature: differences between kudumaa (stunting) and normal short stature.	Ufupi and kudumaa differ	<p>"The child who is stunted is too short and her face looks too mature (sura yake imekomaa). But the child who is short but not stunted has a baby face, her/his skin is soft (ngozi tekeke)." (mother, 42 years, IDI, farmer)</p> <p>"Looking at her/his hair, it looks too soft and light [thin]. It spreads randomly. And when it is too windy, it [hair] may start to fall out. But the child who is short but normal seems to have healthy hair." (KII, community health worker, 50 years).</p> <p>"Short stature is not an illness (sio ugonjwa). A child can be short yet very active, and play football very well. Another child's shortness may indicate an illness (stunting), as</p>

Theme	Description	Codes	Illustrative quotes
Stature as a normal condition given at birth	Local perceptions about the aetiology of a child's stature	Heredity Mpango wa Mungu (God's will)	<p>s/he does not have the ability to run here and there. So, we see that one as stunted and ill." (father, FGD-#01).</p> <p>"The child who is stunted differs from the one who is not. His intelligence becomes stunted. It has some deficiencies." (mother, FGD-#02).</p> <p>"Not all short children are stunted. There are those who inherited the shortness from their parents. But there are those who are short but the parents are tall. That could be due to a lack of good nutrition (lishe bora). A child with that particular kind of shortness (stunting) is usually weak (dhaifu dhaifu). A child whose shortness is hereditary does not grow tall, but s/he is active and her/ his body is big (amejazia vizuri). S/he is chubby (amenepa)." (KIL, community health worker, 50 years)</p> <p>That (stature) depends on what your parents are like. To my knowledge, if the parents are short, a child will also be short. If a child turns out to be tall while the parents are short, you are shocked, wondering why this child is tall!" (father, FGD-#03).</p> <p>"You are not the one who makes a child grow. A child grows by the power of God. You only assist in providing care, such as food. But the one who makes a child grow is God. No matter how hard you try to care for her/him (child), if God refuses, do you think s/he will grow? S/he will never grow." (elderly woman, FGD-#05).</p> <p>"The way we understand it is that whether a person is short or tall is God's will (Mpango wa Mungu). That is how God planned them to be [...]" (father, FGD).</p>
Local knowledge about markers of kudumaa	Knowledge and perceptions about the signs of stunting	Stature is ascertained at birth Physical appearance	<p>"In most cases, a child or people who are destined to be short can be recognized at the time of birth. If his vipingili (the body parts between joints of arms and limbs) are short, you can be certain that this child will never be tall in his/her entire life. But if you see that the vipingili of her/his arms and legs are long, you know that the child will be tall later in his/her life." (father, FGD-#01).</p> <p>"Firstly, s/he usually has hair of an infant (nywele za uchanga). Her/his hair is not good. S/he is growing but still has the hair of an infant; hair that is too thin. Secondly, when you look at her/his face, s/he looks mature (amekomaa uso), her face looks like that of an adult person, but her/his body looks small. That is a symptom of kudumaa. Thirdly, unlike a normal baby, her/his skin looks like that of an elderly person (ngozi</p>

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Theme	Description	Codes	Illustrative quotes
			<p>yake kama ya mzee). Those three symptoms are the ones that indicate that a child is stunted, not the height.” (father, FGD-#01).</p> <p>“S/he usually does not grow tall. S/he normally has a low height. That is when you realize that this child is stunted.” (elderly woman, 45 years, farmer). “Another child may be tall, but his/her face looks mature. That is when we say that this little one is stunted.” (mother, FGD-#04).</p> <p>“S/he is short and has a tiny dry body [mwili mkavu]. His/ her body does not expand (does not become fat).” (father, 54 years, IDI, farmer).</p> <p>“A stunted child does not grow like other children. You find that when his/her age mates can walk but s/he cannot walk. S/he is still sitting down. Then you know that this child is stunted.” (KII, traditional birth attendant, 48 years).</p> <p>“The child who is stunted usually has intermittent illnesses. S/he becomes sick easily, and is regularly hospitalized. Her/his growth (makuzi) is totally different from that of other children.” (KII, community health worker, 40 years).</p> <p>“S/he is frequently sick. S/he may be hospitalized for a time, but as soon as s/he is discharged, s/he falls sick again. His/her health does not stabilize.” (mother, unknown age, IDI).</p> <p>“S/he can be tall but his/her akili (intelligence) is not similar to that of his/her peers. S/he cannot understand things as quickly as others. You then know that the akili of this one is stunted.” (KII, traditional birth attendant, 48 years).</p> <p>“His/her health is not good. S/he wants to stay with his/ her mother all the time. S/he does not like to play with the Other children.” (mother, 18 years, IDI, farmer)</p> <p>“S/he is extremely short, not active, and not as cheerful as her peers. Even when s/he plays, s/he segregates her/ himself from others and plays alone.” (KII, community health worker, 40 years).</p>
	<p>Motor milestones</p> <p>Frequent illness</p> <p>Intelligence (<i>akiti</i>)</p> <p>Play and physical activity</p>		

Theme	Description	Codes	Illustrative quotes
Cultural explanations for the cause of stunting	Knowledge, beliefs, and perceptions about the aetiology of stunting	Poor weight Kubemenda (causing poor growth through non-adherence to postpartum sex taboos) Evil spirits/witchcraft Heavy works	<p>"When you go to the clinic (growth monitoring clinic) they tell you that your child has some nutritional problems. When they assess his/her weight they find that s/he has lost some points in her weight." (elderly woman, FGD- #04).</p> <p>"Another cause of stunting is 'kukatikiza'. A child can be born in good health, but her/his health can be stunted by her/his parents' sexual behavior [..]. If you have sex during the nursing period, the breast milk will become contaminated [by semen/sperms], and your baby will suck dirty milk. S/he will then experience sudden and frequent diarrhoea. S/he will become so weak and will eventually be stunted." (father, 43 years, IDI, farmer).</p> <p>In our community, people commonly throw wadudu wabaya (the evil spirits) everywhere. The evil spirit attacks you when you are breastfeeding your baby. After attacking you, some cause the child to be stunted, and some may even kill. If you are attacked by the spirit that makes a child stunted, you need to be treated by dawa (traditional medicine). When you go to traditional healers (waganga), they treat both you and the child. Eventually, the child starts to walk again." (elderly woman, FGD-#05).</p> <p>"On top of illnesses, others (children) become stunted because of the evil spirits (upepo mbaya). When a child is attacked by the evil spirits, her/his growth is at risk (bahati nasibu)." (mother, FGD-#05)</p> <p>"Kudumaa in a child is caused by heavy work. A child may not have reached the proper age for doing some tasks, but you tell him/her: 'Go and carry a 10-litre bucket of water and bring it here.' The child carries the bucket on his/her head (anajitwisha). S/he then lacks the time and freedom to grow tall (kupanda). In that context, s/he must become stunted." (mother, FGD-#03)</p> <p>"Kudumaa (stunting) is caused by a child being given a heavy load (mzigo mzito) to carry; a load that is too big for her age. That's why s/he never grows tall." (father, 42, IDI, farmer)</p>

The use of a short child's body image, heaviness, ability to crawl/stand/walk on schedule, and immune system as indicators of his/her health is influenced by shared schemas about healthy child growth (more details presented in another manuscript). According to these schemas, fatness, heaviness, freedom from illness, good eating habits, and the timely acquisition of motor skills are key markers of healthy child growth.

5.3.3 Stature as a normal condition given at birth

In this study, caregivers commonly referred to short stature in a child as a “normal condition” (*hali ya kawaida*) that should not worry the parents. While conceptualizing short stature in relation to growth, the participants often stated that “shortness is not a disease” (*ufupi sio ugonjwa*) or “shortness does not matter” (*ufupi sio hoja*). They commonly depicted short stature as a condition caused by heredity (*kurithi*) or God's will (*Mpango wa Mungu*).

Shortness is natural. A child may inherit it from his/her father, grandfather, or mother. If his/her mother is short, s/he will later be short; a normal level of shortness. So, shortness certainly comes from the person's clan. S/he grows well, but s/he can't grow tall. (Elderly woman, FGD-#03).

Some of children are short but others are tall. I find it to be normal. That is how Almighty God created them, nothing more. (Mother, 42 years, IDI, farmer).

Table 6 Difference between Kudumaa (stunting) and normal short stature: the study participants' point of view

	Normal short stature (<i>ufupi wa kawaida</i>)	Stunted stature (<i>ufupi wa kudumaa</i>).
Interpretation	Natural (wa asili/wa kuzaliwa) Hereditary (wa kurithi) God's shortness (ufupi wa Mwenyezi Mungu). Not an illness (sio ugonjwa)	An illness (ugonjwa/ufupi wa matatizo) Poor health Poor growth
Physical markers	Having a baby face Having healthy skin (i.e., soft/babyish skin (ngozi teketeke/ya kitoto) Being chubby/big body size (ananenepa, amejazia, ana mwili, ana afya)	Small body (mwili mdogo) Too short (Kafupi sana) Mature face comparable with that of an adult (amekomaa uso kama mtu mzima) Wrinkled skin that looks like that of an elderly person (ngozi imesinyaa kama ya mzee) Stiff skin (ngozi ngumu) like that of a mature person Immature skin for the child's age Skinny and dry body (Amekomaa mwili/mwili mkavu/mkakamavu/mgumu) Thin arms and legs and tight calf muscles (vigimbi) Body does not expand (does not become fat) Swollen belly or cheeks

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	Normal short stature (ufupi wa kawaida)	Stunted stature (ufupi wa kudumaa).
Weight	Weighs enough (uzito wake mzuri) Weight marker in green area of growth chart	Light body (mwili mwepesi) Weight marker in grey and red colored area of the growth chart Weight loss
Play and physical activity	Active (Kachangamka) Playful (interacts with peers) Robust	Not active (hachangamki) Not playful Does not like to play with peers Always wants to stay with her/his mother Does not have physical strength (hana nguvu) Has a weak body (mwili dhaifu/kanyongea)
Immunity	The child is free of illness/not intermittently sick (haumwiumwi)	The child is intermittently sick (anaumwaumwa) Illnesses do not pass away from him (magonjwa hayampitii mbali) The child is vulnerable to disease and is regularly hospitalized
Motor milestones	The child crawls/stands/walks on time. The child is able to run	Unsteady limbs/arms The child fails to crawl/stand/walk on schedule. The child's peers can walk/run but s/he cannot.
Intelligence	Is intelligent (ana akili) Is clever (mjanja) Has good memory Quickly understands parents' instructions	The child has stunted cognitive abilities (akili imedumaa; i.e., is not smart, not clever, is forgetful/struggles to understand parents' instructions).
Child's mood	Is cheerful/looks happy	The child is not cheerful (hana furaha).
Hair	Healthy hair	The child has stunted hair (dull, too weak, too soft for his/her age [infant's hair], or copper/brown in colour [nywele za shaba]).

They believed a child's stature is a condition given at birth with no voluntary control. In their views, similar to child's skin colour or sex, the child's stature is formed by God during conception, and whether a child will be tall or short in the future is usually ascertained at the time of her/his birth:

Child's height is created since the time of conception (tangu mimba inaingia). During conception, God clearly knows that this child will be tall or short, a girl or a boy. That is why the child's height can be known as soon as s/he is born. (Elderly woman, FGD-#04).

On the basis of the shared schemas that God is responsible for a child's height, they believed that differences in height are not a problem, as these differences exist because God created people in different colours, shapes, and sizes:

Shortness is God's creation. God made us differently so that some people are short and some are tall. Having a child who is short should not cause the parent to worry. Shortness is a sign of God's creativity and blessings. God brought us into the world to live, and not to be similar. God innovates: this one will be white, this one black, and that one brown; this one will be short and that one tall. (Father, 43 years, IDI, farmer).

To explain their schemas in which height differences between children are seen as God given, some participants drew examples from the differences between people's fingers.

Some are tall, some are short. That is the shape that God created. That is why even in our hands, He [God] created five fingers, starting from a short one, to a relatively long one, to the longest one. (Father, 45 years, IDI, farmer).

God is the one who creates children. Some are short while some are tall. It is God who creates his people. Look at the fingers, they are not the same. They are also created by God. That is the reality. (Mother, 18 years, IDI, farmer)

Caregivers' shared schemas, in which heredity or God is seen as the cause of differences in human height, appear to inform the actions they take in response to a child's linear growth. Participants believe that caregivers have no control over the height of their children and that, unlike weight, a child's height cannot be improved through adequate nutrition and medical care:

There is nothing that I can do to make a child tall. Even if you feed her/him good food, vegetables, s/he cannot be tall. As educated people, you must explain it based on your science, but in a real sense, there has never been something like human-influenced tallness. I disagree! A human being cannot make a child tall. (Elderly woman, age unknown).

Religious teachings emerged as important sources of cultural schemas about the aetiology of child's stature and seem to have informed the lack of willingness among caregivers to question short stature in children:

The height of a child is God's will. I cannot question it. I attended 'chuo' [Islamic religious education]. We were taught to never question God's decision to make some people short and others tall. Because the one who created them is God Almighty. (Elderly woman, 76 years, IDI).

5.3.4 A child can be tall but also stunted: Local knowledge about markers of *KUDUMAA*

Given the widespread distinctions between normal short stature and shortness that indicate *kudumaa*, the researchers therefore asked participants how they can tell that a child is stunted. The local model of *kudumaa* (see Figure 2) includes some elements derived from the biomedical model, although the two models differ. Although short stature (*ufupi*) is seen as an important indicator that a child is stunted, the caregivers said they do not view shortness as an independent marker of stunting. They also

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said they do not view shortness as an independent marker of stunting. They also expressed the belief that a child can be tall but stunted. As one mother put it, “Another child may be tall but also stunted. Looking at the way s/he grows, you can just tell that this one is tall but her growth (referring to general growth) is stunted.” (Mother, FGD-#06).

The participants' view that *ufupi* is just one of many important markers of stunting appears to be embedded in the cultural meanings they assign to the word *kudumaa*. Although standard Swahili dictionary refers to the word *kudumaa* as having short stature (Taasisi ya Uchunguzi wa Kiswahili [TUKI], 2013), participants used it to refer to any sign of poor growth and development in a child. Accordingly, in their description of a stunted child, they often used concepts such as “stunted hair,” “stunted face,” “stunted body,” “stunted skin,” or “stunted *akili*” (intelligence).

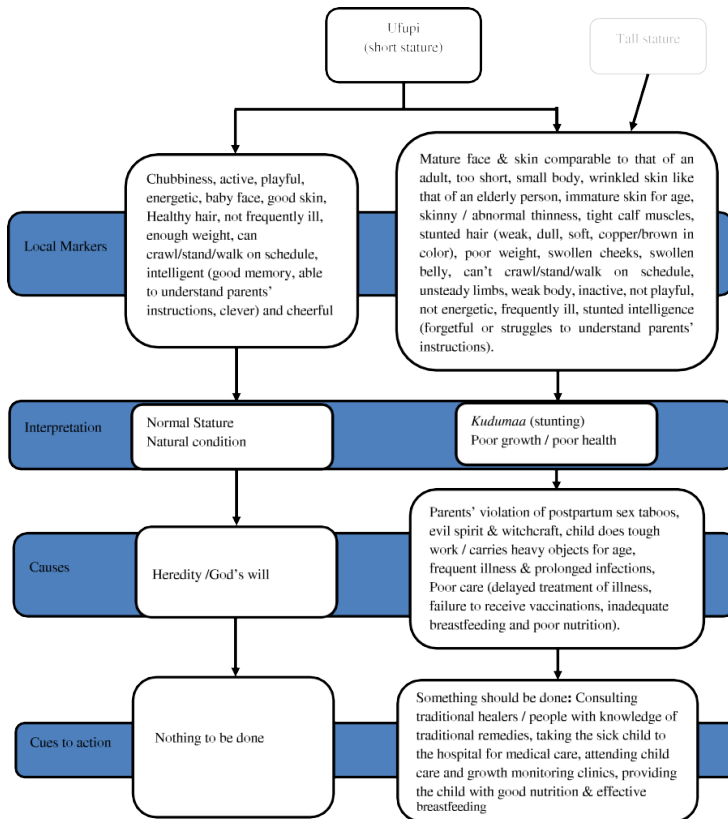
Generally, the participants appear to believe that *kudumaa* goes beyond short stature to indicate faltering growth in a very broad sense. A wide range of cultural signs was cited as indicators of *kudumaa*; if these signs are not present, a child cannot be labelled as stunted based on *ufupi* alone. Physical signs are among the common markers of stunting mentioned by the participants. These markers include the appearance of the face, body, skin, belly, and hair. For example, a child may be considered stunted if she/he has a face and skin comparable with that of a mature person (*amekomaa uso/ngozi kama mtu mzima*), looks short and is so skinny (*mwili mkavu*) that his/her muscles are visible through the skin, has mature and wrinkled skin like that of an elderly person, or has immature skin for his/her age. Additionally, mothers participating in one FGD added that a stunted child looks too short and has thin arms, legs, and tight calf muscles (*vigimbi*):

S/he looks short and her face looks like that of an adult. Others may be tall but her face is too old. Therefore, when people look at her/him they say, “This one has been stunted. Look at her/his face, it is too old.” (Mother, FGD-#04).

When s/he sits down, her/his back muscles are visible through the skin. So, we say that this one is stunted. (Father, FGD-#02).

Her/his body usually looks too mature (*amekomaa*). Even her/his arms (*vikono vyake*) become too mature. S/he is just a little child but her/his legs have tight calf muscles. (Mother, FGD-#03)

Figure 2 Diagnostic flow gram of linear growth: a cultural lens



A few of the participants, particularly the older women and the fathers of under-fives, added that a child can also be perceived as stunted if has a swollen belly or cheeks. Some of the participants, including the community health workers, described a child as stunted when his/her hair is dull, too weak, too soft for his/her age, or is copper/brown in colour (*nywele za shaba*). These are, in fact, symptoms of kwashiorkor or protein-energy malnutrition:

Her/his hair becomes reddish like copper. It doesn't look healthy. That's when you know that this one is not growing (stunted). (Father, 50 years, IDI, farmer).

The use of appearance as a heuristic for determining whether a child is stunted seems to be influenced by shared schemas about how a healthy baby should look. In addition to noting these physical markers, the caregivers commonly described a stunted child as one who is frequently ill, is not active (*hachangamki*), is not playful, and has a weak body:

S/he is different (from the one with normal shortness). As I told you earlier, s/he is not as active as her/his peers. S/he is a bit weak. Her/his calmness

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Culturally, a child is seen as stunted if she/he is forgetful or struggles to understand her parents' instructions:

The intelligence of a stunted child has deficiencies. If you send her somewhere to get something, s/he has no sense of direction (looks confused).

If you send her to the shop, s/he does not bring back the things you sent her for. Sometimes s/he goes there and forgets, and comes back to ask, "What did you send me for?" (Mother, FGD-#04).

5.3.5 Cultural explanations for the cause of "stunting"

The cultural construction of stunting (*kudumaa*) reflects faltering growth that goes beyond height deficits. Participants cited aetiology of childhood stunting that deviates from those cited in the biomedical model. Their perceptions of the aetiology of childhood stunting appear to be a blend of ideas derived from both the biomedical model and their cultural meaning systems. Here, we present the participants' perceptions of the aetiology of stunting, starting with those that are based on cultural meanings, followed by those that are in line with the biomedical model.

When asked about the aetiology of stunting, the participants spontaneously mentioned *kubemenda*; that is, the belief that poor child growth and development and ill health are caused by the parents' violation of postpartum sexual abstinence norms. Culturally, it is believed that a child's growth can be impaired when (a) the parents have sexual intercourse while a baby is still breastfeeding (b) or during a new pregnancy while the mother is still lactating (*kukatikiza/kumruka mtoto*). According to the participants, when a nursing woman engages in sexual intercourse, her vaginal excretion and a man's semen/sperm (*manii/mbegu*) run toward the woman's breasts and pollute the milk. Thus, when the baby sucks the milk blended with genital fluids, she/he eventually contracts diarrhoea and her growth falters. Additionally, it is believed that when sucked by the baby, the genital fluids flow towards the baby's legs, which weaken the joints and cause the baby to lack the strength to stand/walk on schedule (one of the cultural markers of *kudumaa*). It is also believed that a new pregnancy alters the mother's body temperature, which eventually spoils her breast milk by making it hot, turning it into colostrum of a yellowish or brownish colour. Thus, when a baby sucks the spoiled milk, she/he experiences diarrhoea and vomiting. Similarly, it is believed that both the body heat (*joto*) and the sweat (*jasho*) generated by the sexual act and a new pregnancy inflict ill health and general body weakness on the child, particularly when a parent touches/carries the baby. (More details are presented another manuscript i.e., chapter 6).

Although the belief about the violation of postnatal sexual taboos and its impact on child growth also exists among the Masai community, it was rarely mentioned by the Masai participants, particularly the mothers of under-fives, when discussing the aetiology of stunting. Whereas the majority of the participants in the study setting linked *kubemenda* to general signs of growth faltering, a few of them linked it to short stature in children:

A child can be stunted because of the (behavior of) a father and a mother. When you engage in sexual intercourse (*tendo la ndoa*) carelessly, without any plan to protect the child, s/he will be stunted even if s/he was healthy and tall. When a child sucks her/his father's dirties ("uchafu") i.e. semen/sperm, which

contaminate the mother's breast milk, that child must be stunted. That is a fact that cannot be refuted. There are two sorts of shortness (*ufupi*), God's shortness (*ufupi wa Mungu*) and the one that we parents create [...] (Fathers, FGD-#05).

A few of the mothers and the elderly women in the FGDs, all of whom belong to the Bantu ethnic groups, ascribed *kudumaa* to witchcraft or invasion by capricious, malevolent spirits (*mdudu* or *upepo mbaya*):

As we said, there are some *wadudu wabaya* (evil spirits), which get into a child's body and make her/him stunted. So that child will never move; s/he only sits and may not even be able to crawl. There are those who are stunted due to diseases, but there are those who are stunted due to evil insects. (Elderly woman, FGD-#05).

Beliefs in witchcraft (*uchawi*) or the infliction of evil spirits is widespread in the study setting and particularly among the Bantu ethnic groups and are mentioned in everyday conversations. Participants said they believe there are evil spirits roaming in the air that can attack children and cause them to become ill. Similarly, they also believe that some people have bad eyes, and the power to keep and control *majini* (evil spirits) that they intentionally send to harm children (*kurushiwa jini*) out of jealousy or hatred. The evil spirits are said to have the ability to cause children to develop symptoms of seemingly normal conditions, such as severe malaria (*degedege*), or to become too weak to walk. It is also believed that these spirits can stop a fetus from growing. In most of these cases, traditional healers (*waganga*) are consulted to detect the presence of evil spirits and to provide treatment. This is particularly when a caregiver believes that the condition is supernatural or when biomedical treatments have failed or are taking too long. The healers are also asked to protect children and unborn babies by preparing charms and amulets (*kamwa* or *azama*).

Another prominent cultural explanation for stunting in the study setting is that height deficit in particular is caused by forcing children to carry objects that are too heavy for their age or to perform tough chores while still young. Participants explained that mothers who are overwhelmed by their gendered tasks may seek support from their young children in performing domestic chores, such as fetching water and collecting firewood, that can limit a child's height and cause his/her skin to age prematurely:

When you make a young child to carry a bucket full of water that weighs 20 kg, do you think s/he will grow? Do you expect her to be tall? ... Children grow up doing hard work. We parents are the cause of that; we expose children to hard work. Sometimes you find that even the flesh of a child's buttocks ages. So, others are stunted due to hard work. (Elderly women, FGD-#2)

Finally, in line with the biomedical model, almost all of the participants ascribed *kudumaa* to frequent and prolonged infections, poor care, including delays in the treatment of illness, the failure to get recommended vaccinations, inadequate breastfeeding, and poor nutrition.

Chapter 5. Meanings attached to childhood height

However, when discussing the impact of these factors, they often referred to cultural markers of *kudumaa* that go beyond short stature:

If you are not providing good food to children, they can be stunted. You find that if a child has been starving for a long time, his intelligence (akili) becomes stunted. (KII, Traditional Birth attendant, 48 years)

A child can be stunted for two reasons. First, a child may be stunted due to living in a difficult and unfavorable home environment. Stunting may also be caused by prolonged diseases in a child that delay his ability to crawl or walk. (Father, 43 years, IDI, farmer).

Thus, it appears that the cultural schemas of the participants regarding child stature and stunting include both biomedical explanations and locally held supernatural beliefs.

5.4 Discussion

In this ethnographic study, we aimed to explore caregivers' perspectives on child height in relation to child growth and the schemas that influence their interpretations of and the meanings they attach to short stature and stunting. Although we found that the participants integrated some biomedical concepts into their local models and practices, the constructs and the meanings they attach to height, short stature, and stunting in children are primarily embedded in their cultural template. Participants believed that child height is unrelated to nutrition, health, or growth. Short stature is generally perceived as a normal condition that is a function of God's will or of heredity and that cannot be influenced by caregivers. The caregivers acknowledged that short stature is one of the crucial indicators of stunting but said they do not see it as an independent marker, arguing that a child can be tall while also being stunted. Cultural and religious beliefs thus appear to shape the participants' interpretations of and the meanings they attach to short stature in children and to inform their actions.

5.4.1 Short stature as a normal condition

Although short stature (low height-for-age) is considered to be a marker of growth deficiency and poor health (de Onis & Branca, 2016; Dewey & Begum, 2011; Reifsnider, Allan, & Percy, 2000; Ruel et al., 1995), the participants indicated that they perceive it as a normal condition that should not worry parents. Hence, a child's short stature may not motivate his/her caregivers to seek medical help if it is not accompanied by cultural signs. It has also been shown that "stunting goes unrecognized in communities where short stature is so common that it is considered normal" (de Onis & Branca, 2016; Dewey & Begum, 2011). Although this may be a good explanation for the normalization of short stature in children, it does not appear to apply to our study population. Unlike in a biomedical context, the term "normal" (*kawaida*) used by our participants refers not to the high prevalence of short stature in the community but to the assumption that height is a natural condition determined by heredity or God's will (*Mpango wa Mungu*) and thus lies beyond the influence of caregivers. Furthermore, whereas the normalization of short stature appears to be shaped by shared schemas that linear growth in children is beyond caregivers' influence (God's plan), it may also reflect the relative poverty of the community members and the inability of the community's cultural meaning system to help individuals interpret symptoms of poor health, including short stature. The tendency of caregivers to ascribe certain health conditions to natural causes is also evident in

other studies conducted in the same region as that of the current study. For instance, a study by Muela, Ribera, and Tanner (1998) about lay perspectives and health-seeking behaviour regarding malaria among children in Southeastern Tanzania reported that “people habitually speak of *malaria* as a ‘normal illness’ (*ugonjwa wa kawaida*) or an ‘illness of God’ (*ugonjwa wa Mungu*).” They further clarified that in the study context, the term normal (*kawaida*) does not refer to the high prevalence or the severity of the illness but instead expresses the belief that such an illness is part of the natural order created by God.

Chubbiness and heavy weight emerged as one of the important markers that a short child is nonetheless healthy. This view may be influenced by the participants' cultural constructs regarding healthy growth: That is, that heaviness and chubbiness alone are sufficient to show that a child is in good health and has been receiving good care (more details are presented in another manuscript). The schema that a short child with a fat/heavy body has “normal shortness” can cause caregivers to fail to recognize the risk of double malnutrition (i.e., stunting and obesity) and thus to fail to seek help.

In this study, the caregivers habitually relied on peer comparisons to judge whether a child was stunted using a number of criteria, notably the child's motor development skills and height increment. Notwithstanding, their general understanding of the ideal height for a child was vague. The lack of proper biomedical knowledge regarding linear growth trajectories in children has also been reported in studies conducted in Bangladesh (Hossain et al., 2018) and in Guatemala (Reifsnider et al., 2000).

These findings have implications for programs directed at reducing levels of stunting, as defined by WHO. The promotion of strategies to address the information gaps in the recognition of linear growth faltering among caregivers (Roberfroid, Pelto, & Kolsteren, 2007) and the integration of the concept of stunted (linear) growth into the awareness messages to mothers (Turnbull, Martínez-Andrade, Huérfano, Ryan, & Martínez, 2009), may help to improve linear growth outcomes. Although we agree with this suggestion, we would caution that it may take a long time for an emphasis on awareness messages to positively impact caregivers' mindsets, as the cultural schemas and meanings are shared, created, and performed within the wider community and are thus difficult to change (Bailey & Hutter, 2006). On the basis of our findings, we would argue along with Hossain et al. (2018) that in order to be effective, programs targeting childhood stunting need to be aligned with local interpretations of the condition. As Helman (2007) states, a person is unlikely to seek care and treatment for an illness unless its symptoms and signs are aligned with society's view of what constitutes an illness.

5.4.2 The gap between cultural and biomedical framework of stunting

Although caregivers in this study seemed to integrate biomedical concepts into their understanding of stunting, their conceptualization of child height and their locally based knowledge of the markers of stunting diverged sharply from those of the biomedical model. Culturally, stunting is broadly conceptualized beyond height. Thus, in some cases, a short child can be considered healthy if he or she is chubby, active, and not frequently sick, and a tall child can be regarded as stunted if she or he portrays typical symptoms of *kudumaa*, including face and skin comparable with that of a mature person, abnormal thinness, inability to crawl/stand/walk on time, and unhealthy hair. This indicates that height and short stature in particular, is not the

only criterion in the cultural schema of growth, which suggests differences in the biomedical and the cultural perspectives on stunting.

The participants in the present study appear to believe that *kudumaa* (also referred to as *udumavu*) goes beyond short stature (*ufupi*) to indicate faltering growth in a very broad sense. This conception diverges greatly from the linguistic and the biomedical conceptualizations of stunting. Commensurate with the biomedical conceptualization of stunting, the word *kudumaa* is referred to in the standard Swahili dictionary as having short stature or height deficits (*ufupi*) owing to inadequate care, nutrition, and/or illness, and it can be used to refer to the growth of living things, including human beings, animals, and plants (TUKI, 2013). Despite this fact, people commonly use it generically to refer to any kind of poor growth and development, including that of children (*kudumaa kwa mtoto*), plants (*kudumaa kwa mimea*), or the economy (*kudumaa kwa uchumi*). In this study, for example, the use of the word extended to include poor condition of specific aspects of growth and development in a child such as “stunted hair”, “stunted face”, or “stunted intelligence.” Participants’ construction of the word stunting as a general term for “growth faltering” may be attributed to the contextual versatility of the word *kudumaa*, as highlighted in the foregoing paragraph.

The aforementioned findings highlight a need for revisiting the educational and promotional messages targeting child linear growth. This is because, if the language and conceptual framework understood by caregivers are in disharmony with those used by health professionals in nutrition programs, then chances of miscommunication may be high (Launer & Habicht, 1989), and the advice may not have the intended effect. Nutrition education is an important component of programs designed to improve child nutritional status, including linear growth. In Tanzania, however, its effectiveness can be impaired by the existing differences in the conceptual framework. The concerns on difference in concept meaning between local people and the biomedical model are also detailed in previous research in rural Mexico (Turnbull et al., 2009), in Guatemala (Reifsnider et al., 2000), and in Indonesia (Launer & Habicht, 1989). In the study setting, for example, the use of the term *kudumaa* in counselling mothers on poor linear growth of their children may not send a clear message that will motivate mothers to invest in promoting height of their children. Instead, health professionals and practitioners would make a great impact if they would directly refer to specific term “short stature” (*ufupi*) when referring to stunting.

5.4.5 The use of traditional care

These cultural schemas are relevant not only for conceptualizations of child height and markers of stunting but also for the aetiology of stunting and health-seeking behaviour. In the participants’ cultural model, symptoms indicative of malnutrition—such as sudden weight loss, poor motor skills development, a swollen stomach, swollen cheeks, copper-coloured hair, pale skin, and cognitive retardation— can be ascribed to various factors, including the parents’ violation of postpartum sex taboos and the invasion of evil spirits. These beliefs may prompt caregivers to seek care from traditional healers rather than from health professionals. Similar findings have been reported elsewhere in Tanzania (Makundi, Malebo, Mhame, Kitua, & Warsame, 2006; Muela et al., 1998). It has for example, been shown that mothers’ linking of severe malaria in children to supernatural causes them to rely on traditional healers for treatment of convulsions. While raising community awareness of the symptoms and aetiology of stunting is important, the engagement of traditional healers is central to

the successful implementation of interventions against malnutrition. Studies conducted in Tanzania (Makundi et al., 2006) and elsewhere in SSA (Aubel & Samba-Ndure, 1996; Eliason, 1999) have shown the importance of using local resources, such as religious leaders and traditional healers, in ensuring the utilization and sustainability of health interventions.

For example, in a study done in Kilosa (the district in which this study was conducted), traditional healers were involved in the implementation of community-based rectal artesunate. The results showed that this approach improved the management of severe malaria in children by encouraging parents to seek biomedical treatment early (Makundi et al., 2006). It is therefore clear that traditional healers can provide valuable forms of assistance to caregivers concerned about the growth of their children because they are able to provide solutions and remedies that make sense to the community members. In line with Muela et al. (1998) and Makundi et al. (2006), we recommend the forging of alliances between medical health personnel and healers that focus on improving the capacity of healers to refer patients to medical clinics and on decreasing the likelihood that harmful traditional practices will be employed. However, more operational research is needed to determine how traditional healers can be successfully incorporated into interventions targeting poor growth in children.

5.5 Strengths and limitations

The current study has several strengths. Even though malnutrition, particularly stunting (short height-for-age), is one of the most serious health problems affecting under-five children and is the single greatest cause of child mortality in Tanzania, this is the first study in Africa to explore how caregivers of under-five children conceptualize child height and short stature in relation to child growth using qualitative methodology. Additionally, conducting FGDs and IDIs by applying cultural schema theory and using Swahili (the local language spoken by the majority in the study setting) and analysing the data in the original language resulted in rich data. Our study is also unique in that, unlike in previous studies, it included a sample of caregivers of under-five children from the general population, regardless of the growth status of their children. Because maternal and child nutrition are public health problems, we believe that by engaging various caregivers across generations in generating data for this study, our research sheds light on issues relevant to the development of policy and interventions. It is possible that the results would differ if the study sample included only caregivers whose children are confirmed as being stunted. Additionally, because the study was conducted in a rural part of the country, and the number of participants was small, the generalizability of the findings may be limited. However, we believe the study's findings are highly relevant to the wider Tanzanian context, as a large share of the country's population lives in rural areas where the prevalence of childhood malnutrition is especially high (TDHS, 2010; Tanzania Food and Nutrition Centre, 2014; United Nations Children's Fund, 2016).

5.6 Implications

In Tanzania, where approximately half of under-fives in rural communities are stunted, understanding caregivers' conceptualizations of child height in relation to growth and the meanings they attach to short stature is an important step in developing effective interventions to reduce or prevent stunting.

Stunting is currently identified as a major global health priority (de Onis & Branca, 2016), and global efforts to eliminate stunting are being scaled up, with an emphasis on multisectoral initiatives to address the underlying drivers of stunting (de Onis &

Branca, 2016; Hossain et al., 2018). As part of a renewed commitment to address the problem of child undernutrition, the Tanzanian government has recently launched a five-year National Multi-Sectoral Nutrition Action Plan (NMNAP 2016–2021). The NMNAP is regarded as a “double duty” multisectoral action plan, as it intends to address both undernutrition (acute malnutrition and stunting) and the emerging double burden of malnutrition (NMNAP 2016–2021). Additionally, the government of Tanzania, together with various partners, have been implementing recommended preventive and curative interventions, including the early diagnosis and treatment of malaria in children and the increasing coverage of essential vaccination and deworming services and of micronutrient supplementation programs, such as vitamin A supplementation. On the basis of the study's findings, the authors argue that although the current programs are very valuable, they may fail to tackle childhood malnutrition if they do not use a bottom-up approach in designing interventions. To reduce childhood stunting among the rural population in the study area and similar settings in the country, public health programmers should:

- Try to understand the local perspectives and schemas of child height and short stature employed by people in their own context and use this knowledge in designing and implementing any intervention.
- Develop a more comprehensive educational strategy that merges the knowledge, conceptual frameworks, and terminologies of caregivers and health providers (including traditional healers). Behavioural change can only be successful if the new knowledge is contextualized and adapted to the frameworks of the participants. Thus, to draw people's attention to stunting, we need to explain the problem through their cultural frameworks, rather than negating these frameworks.
- Include routine screening of child height during growth monitoring services. As stated by de Onis and Branca (2016), the visual challenges in identifying stunted children and the failure of primary health care services to routinely assessing linear growth, contribute to the lack of awareness of the magnitude of stunting. The inclusion of height assessment in routine growth monitoring practices in Tanzania will facilitate the early identification of children at risk of stunting and will thus allow practitioners to offer timely interventions and advice to mothers.
- Implement multifaceted and transdisciplinary approaches that tackle childhood stunting by addressing inequalities within the community.

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Chapter 6

Postpartum sex taboos and child growth in Southeastern Tanzania: implications for child care.

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Abstract

The social context and cultural meaning systems shape caregivers' perceptions about child growth, and inform their attention to episodes of poor growth. Thus, understanding community members' beliefs about the etiology of poor child growth is important for effective responses to child malnutrition. We present an analysis of caregivers' narratives on the risks surrounding child growth during postpartum period, and highlight how the meanings attached to these risks shape child care practices. We collected data using 19 focus group discussions, 30 in-depth interviews, and five key informant interviews with caregivers of under-five children in Southeastern Tanzania. Parental non-adherence to postpartum sexual abstinence norms was a dominant cultural explanation for poor growth and development in a child, including different forms of malnutrition. In case sexual abstinence is not maintained or when a mother conceives while still lactating, caregivers would wean their infants abruptly and completely to prevent poor growth. Mothers whose babies were growing poorly were often stigmatized for breaking sex taboos by the community and by health care workers. The stigma that mothers face reduced their self-esteem and deterred them from taking their children to the child health clinics. Traditional rather than biomedical care was often sought to remedy growth problems in children, particularly when violation of sexual abstinence was suspected. When designing culturally sensitive interventions aimed at promoting healthy child growth and effective breastfeeding in the community, it is important to recognize and address people's existing misconceptions about early resumption of sexual intercourse and a new pregnancy during lactation period.

Key words: sexual abstinence, postpartum, taboos, poor child growth, stigma, cultural schema, Tanzania

6.1 Introduction

The cultural and social context within which caregiving occurs has a large impact on the conceptualization of child growth, and it informs how caregivers regard the growth of their children. For instance, in Southeastern Tanzania, height is culturally perceived as unrelated to nutrition or health, but rather as a function of God's will and/or heredity. Thus, in this context, short stature in a child is considered a normal condition that should not worry the parents (Mchome, Bailey, Darak, & Haisma, 2019). Additionally, it has been shown that in Ethiopia (Belachew et al., 2018) and in Tanzania (Dietrich Leurer, Petrucka, & Msafiri, 2019), infants less than six months old are not exclusively breastfed based on the cultural belief that mother's milk alone is not adequate to provide for an infant's growth needs. These findings suggest that understanding the socio-cultural context of child growth and how it influences caregivers' actions is essential to efforts to prevent childhood malnutrition. In this study, we seek to identify the social context and the cultural schemas that underlie community members' beliefs about and perceptions of the etiology of poor child growth. We also use cognitive anthropological cultural schema theory to present an analysis of caregivers' narratives on the risks surrounding child growth during the early postpartum period. Finally, we highlight how the meanings caregivers attach to these risks shape child care practices.

Mary Douglas (Douglas, 1966) has argued that each culture has its own "taboos" associated with bodily pollution that represent a framework for social order. When such a framework is in place, society knows who is to blame when these taboos are violated. Thus, for every risk that exists, blame is placed on a particular person by the community/social group. Communities' concerns about the risks surrounding child health related to the sexual behavior of the parents during the postpartum period have been documented in several studies for West African countries (Achana, Debpuur, Akweongo, & Cleland, 2010); Elliston, 2005; Herdt 2006; Wambach & Riordan, 2010) and for East African countries, including Tanzania (Mabilia, 2000; Mbekenga, Lugina, Christensson, & Olsson, 2011; Mbekenga, Pembe, Darj, Christensson, & Olsson, 2013); Mrisho et al., 2004). Qualitative research conducted in Tanzania has shown that both men (Mbekenga, Lugina, et al., 2011) and women (Mbekenga, Christensson, Lugina, & Olsson, 2011) are concerned about the initiation of sex during the breastfeeding period, based on the belief that doing so negatively affects the health of the baby.

The custom of prolonged postpartum sexual abstinence is also associated with increased risks of HIV and other sexually transmitted infections, as men may feel free to engage in extramarital sex while women are required to remain abstinent (Achana et al., 2010; Cleland, Mohamed M, & Capo-Chichi, 1999; Iliyasu et al., 2006). Concerns about the negative health implications and the risks associated with prolonged abstinence norms for parents and their children have also been voiced by Swazi women (Shabangu & Madiba, 2019) and Tanzanian parents (Mbekenga, Christensson, et al., 2011; Mbekenga et al., 2013). Additionally, it has been pointed out that these postpartum sex norms can perpetuate gender inequalities, as women are expected to strictly adhere to postpartum sexual abstinence norms, whereas men are not (Mbekenga et al., 2013).

In previous research in Tanzania, postpartum sex taboos have been discussed in relation to breastfeeding (Mabilia, 2000; Mabilia 2005), gender inequalities, and maternal and family health (Mbekenga et al., 2013). The current study contributes to the existing evidence on the beliefs around postpartum sexual activities by focusing on

how these beliefs relate to child growth, and how they affect caregiving practices that are relevant to child growth. This analysis is part of large ethnographic study that sought to shed light on the socio-cultural context of child growth in Southeastern Tanzania. It should be noted that the interviewers did not ask caregivers directly about their beliefs around postpartum taboos, but that these views emerged inductively from caregivers' accounts of the socio-cultural contexts that underlie healthy / poor growth in children. The results of the analysis deepen our understanding of how social context shapes beliefs and practices around (poor) child growth.

6.2 Cultural schemas theory

According to (D'Andrade, 1984), a community's cultural meaning systems are composed of shared cultural schemas—i.e., knowledge structures—that allow people to identify objects and events. These schemas may include perceptions, beliefs, emotions, goals, and values (D'Andrade, 1992; Hill & Cole, 1995). Moreover, these schemas are context-specific, and can function as powerful sources of knowledge and meanings (D'Andrade, 1992). Some schemas are specific to individuals, while others—i.e., cultural schemas—are shared by a group of people, and are highly internalized (D'Andrade, 1992; Fichter & Rokeach, 1972; Garro, 2000). These schemas develop throughout life, as individuals interact with the context in which they live. Since cultural schemas are not static, individuals may experience cultural change over time. Thus, people may internalize cultural schemas differently at different life stages (D'Andrade, 1992; Garro, 2000).

As Douglas (1996) has argued, when socio-culturally shared values—which define what is good and bad behavior—are internalized, they become a template for guiding individual behavior, and for morally judging oneself and others (Rokeach, 1968). Due to their evocative function, adherence to cultural values, such as avoiding morally unacceptable sexual behavior during the postpartum period, may elicit feelings of satisfaction, whereas violations of cultural values may provoke anxiety (Mathews, 2012) and blame (Douglas, 1966). People in different societies have different ways of conceptualizing and ascribing meaning to a particular health condition (e.g., poor child growth) depending on their community's cultural meaning systems (Bailey & Hutter, 2006; Metta et al., 2015). For this ethnographic study, we applied these insights from cultural schema theory to examine how local people construct the risks surrounding child growth during the early postpartum period (breastfeeding period), and how their perceptions of these risks influence caregivers' actions.

Key messages

- “Kubemenda”—parents causing their child to grow and develop poorly by violating postpartum sexual abstinence norms—is the dominant cultural explanation for growth faltering among young children in Kilosa, Morogoro region, Tanzania.
- The symptoms and signs typical of childhood illnesses and malnutrition are ascribed to the parents’ violations of postpartum sex taboos. Thus, traditional rather than biomedical care is sought to remedy growth problems in children.
- Abrupt and complete weaning is a common practice to avoid poor child growth based on kubemenda.
- As health workers are part of the cultural context in which they live, they have the same cultural schemas based on kubemenda as caregivers, and apply these schemas in providing medical services in health care settings.
- To ensure that the advice caregivers are offered in health care settings does not contradict the concepts and advice they are familiar with from their home environment, health workers may want to integrate the concept of kubemenda into their educational and health promotion materials by addressing the myths and misconceptions embedded in postpartum sex taboos.

6.3 Methods

6.3.1 Fieldwork setting

This study was conducted in a single rural village in the Kilosa district of the Morogoro region of Tanzania. Even though Morogoro has high levels of food production, the prevalence of stunting among under-five children in this region is high, at 33%. The fieldwork setting has been described in detail elsewhere (Mchome et al., 2019), but in short, the study community consists of two main ethnic groups: (1) the native Bantu group, to which the majority of the population belong; and (2) the Maasai group, which is a Nilotic minority group of people who migrated to this area in the past two decades in search of pasture for their livestock. Because of the region’s high prevalence of stunting and anemia (66%), as well as its rural characteristics, we considered it an interesting location for our study on caregivers’ beliefs about the etiology of poor growth among young children, and on how these beliefs shapes caregivers’ responses to growth faltering. In the study village, there is no health facility. Thus, the people in the village depend on health services from nearby health facilities (dispensaries) outside of the ward, which are approximately 3–6 km away. The staff working in the dispensaries includes clinical officers, nursing officers, assistant nurses, and laboratory technicians. The local health system in the village is pluralistic, as caregivers have access to pharmaceuticals, traditional medicine, and growth monitoring services.

6.3.2 Study participants and data collection

This study draws on an ethnography on child growth that engaged focus group discussions (FGDs), in-depth interviews (IDIs), participant observations (POs), and key informant interviews (KIIs) with caregivers of under-five children (who included biological mothers and fathers of under-five children, regardless of the children’s nutritional status), elderly women, traditional birth attendants (TBAs), and community health workers (CHWs). For the current paper, we drew from data collected through FGDs, IDIs, and KIIs only.

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We conducted FGDs in order to obtain a broad range of information on the cultural construction of ideal / poor child growth in the community. The IDIs were used to collect rich information on caregivers' personal experiences and their individual perspectives on the growth of under-five children. The key informant interviews with community health resource workers (i.e., TBAs and CHWs) enabled us to gather detailed contextual information relevant to the issue of child growth in the community from the perspective of health service providers. It should be noted that the CHWs referred to in this study were not professional health care providers. In the Tanzanian context, CHWs are individuals selected from the community and trained according to government standards to provide an integrated and comprehensive package of interventions, including child growth monitoring services—particularly in areas where there is no health facility (like in the study village).

The caregivers were selected for inclusion in the study using purposive sampling, which was performed with the support of local administrative leaders, CHWs, and social networks the researchers developed during the fieldwork. Data collection was conducted in two phases: the first round of fieldwork (from July to September 2015) involved 19 FGDs, while the second round of fieldwork (August to September 2016) involved 30 IDIs and five KIIs. We conducted the FGDs first in order to gain a general understanding of the issues related to the growth of under-five children in the community. We then transcribed and coded all of the FGDs before proceeding with the second phase of the fieldwork. The second phase of data collection was delayed not only by the time needed to process the FGD data and to adapt the interview guides, but by arrival of the rainy season, which runs from approximately November to July.

Two Tanzanian female researchers (the principal investigator (PI) and a research assistant) with a postgraduate social science background in sociology were involved in the data collection. Both researchers had advanced training and extensive experience in qualitative methods. All of the FGDs and IDIs were conducted in Swahili, digitally recorded, and fully transcribed verbatim by two transcribers, including the research assistant. While most of the interviews were conducted in the participants' homes, the FGDs were conducted in different venues in the village, such as school classrooms (after school hours), and at the PI's or the participants' home compounds. Each FGD consisted of 6-8 participants. Drawing on their research experience with sexual and reproductive health issues, the researchers were able to help shy participants to open up, particularly when discussing the sensitive topic on the link between sexual behavior and child growth. The interview and the discussion topic guides were open-ended, and covered various topics, including perceptions of child growth, contextual factors that underlie child growth, child feeding practices, and experiences with growth monitoring services (see Appendix 2-7). Most of the information on the link between postpartum sexual behavior and child growth emerged as participants were sharing their conceptualizations of healthy and poor child growth, and when they were providing their views on the socio-cultural contexts that underlie poor growth among young children in the community. Data collection continued until the saturation point was reached.

6.3.3 Data analysis

Following completion of data transcription, the first author reviewed all of the transcripts and checked them for accuracy before importing them to NVivo 11 software (QSR International Pty Ltd, Australia). All of the transcripts were analyzed in their original Swahili language. The quotes presented in this article were translated during

the writing of the paper. Through reading of the texts for general understanding, the researchers were able to identify the concepts and the statements of importance to participants that refer to a potential association between parental sexual behavior during the postpartum period and child growth. The analysis process took place at two levels: (1) inductive and deductive codes were developed; (2) and these codes were categorized into groups of themes and family codes, as described in Hennink, Hutter, & Bailey (2011).

6.3.4 Ethical issues

Full ethics approval was obtained for the study from the University of Groningen Research Ethics Committee, and the Tanzania Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC) through the Medical Research Coordinating Committee (MRCC) of the National Institute for Medical Research (NIMR). Additionally, permission was granted by the regional, district, and village leaderships prior to the commencement of the research activities. Full information was provided to participants verbally and in written form in Swahili, and written / thumbprint consent was obtained. The participants' anonymity was ensured by conducting the discussions / interviews in private locations, and removing all identifiers from the interview transcripts prior to data analysis. In the quotations that appear in this paper, pseudonyms are used to protect the participants' identities.

6.4 Results

In data analysis, three themes emerged: (1) construction of sex taboos and risks around child growth during postpartum period; (2) shame and/or honor as the outcomes of non-/adherence to postpartum sex taboos; and (3) the influence of the cultural context on child care practices.

6.4.1 Construction of sex taboos and risks around child growth during Postpartum period

The postpartum sex taboos

In the study community, the early postpartum period is culturally constructed as the "nurturing" period (*kipindi cha kulea*) during which a mother is expected to dedicate herself to the task of breastfeeding to ensure that her baby grows well. It is widely believed that sexual relations between couples during the lactation period can endanger a child's health / growth. Thus, sexual abstinence is a dominant traditional practice that has been adopted to promote healthy child growth:

"If you give your baby good care, s/he grows fast. S/he can even walk early if you do not spoil her/him. [...]. On top of providing her/him with food, porridge, and protecting her/his body, you also do not sleep with your man. That is to enable her/him to grow fast. But if you crave that 'thing' (sex), the baby will be spoiled (*ataharibika*). S/he does not grow." (Older woman, FGD-#06)

In the participants' cultural models, sexual abstinence had several meanings, ranging from total abstinence from sex for both parents, to the mother having intermittent sex with the biological father (*kulea na baba*), to the mother abstaining while the father has sexual affairs with other women. There were variations in the length of postpartum sexual abstinence to enhance healthy growth, ranging from 40 days (*arobaini*) to two and a half years. Similarly, sex can be resumed when the child has been weaned or shows cultural markers of healthy growth, such as being able to walk or talk, being active, or being able to comprehend the instructions of parents or caregivers.

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The study found intergenerational differences in levels of adherence to these postpartum sexual norms. The older women in particular criticized younger couples for being more likely than preceding generations to rebel against postpartum sexual abstinence norms. The participants attributed the changes in levels of adherence to (1) globalization (*utandawazi*), which exposes young people to Western culture; (2) the availability of modern contraceptives; and (3) moral decay among younger couples. Some of the younger women described the postpartum sexual norms as an old-fashioned way of nurturing children (*imepitwa na wakati*), and acknowledged that they were not following them:

“Some stay (abstain from sex) for two years. But for many current youths, they usually stay for one year. I myself can’t stay for two years (laughing). I stay for only three months and tell my man, ‘Hello sir, bring it’ (laughing).” (Mother, FGD-#05)

“Kubemenda”: Cultural explanation for poor child growth.

The dominant cultural explanation for poor child growth during the early postpartum period is *kubemenda*, also referred as *kubenanga / kukatikiza*. According to the Swahili dictionary, the word *kubemenda / bemenda* (also *chira*) is a verb that means to harm the baby through the violation of cultural norms (BAKITA, 2016). Moreover, in the study context, the term *kubemenda* can mean that the parents are causing their baby to become ill or show symptoms of poor growth and development by failing to adhere to postpartum sexual norms.

Regardless of their ethnicity, age, or sex, the study participants strongly believed that the main cause of poor growth among the children in the community was that parents were violating postpartum sex taboos:

“The main thing that greatly spoils children here in our community is sex (*tendo la ndoa*). Whether you provide your kids with fruits or not, God helps them to grow well. It is that thing (sex) that mainly affects the baby.” (Mother, FGD-#01)

“You find that a mother has a little child but keeps on doing sex with her husband. That is when they ruin a child’s growth. Instead of giving the child an opportunity to grow, they interrupt it.” (Father, IDI-#04)

Most of the consequences attributed to *kubemenda* overlapped with the biomedical symptoms of malnutrition (*utapiamlo*) (see Table 7 for a full list). The parents frequently used schemas that referred to *kubemenda* in interpreting the etiology, the consequences, and the markers of poor growth episodes in both their own children and in the children of others. The case of Jamila, a community health worker who was the mother of an under-five child, is presented in box 1. Her story shows that the belief that *kubemenda* is a cause of poor child growth was held not only by the local people, but by some elite community health professionals, such as traditional birth attendants and community health workers (figure 3).

Behaviors that can endanger child growth

The participants identified two parental behaviors that can endanger a child’s growth during the early postpartum period: (1) having sexual intercourse during the lactation

period; and (2) becoming pregnant with another child during the lactation period (*kukatikiza / kumruka mtoto*).

(1) Risks arising from the parents engaging in sexual intercourse

The analysis showed that the caregivers' cognitive representations of the notion that parents having sex during the early postpartum period puts their child's growth at risk was influenced by their cultural schemas regarding impurities that are carried by bodily substances generated during sexual intercourse.

Table 7 Growth and health outcomes resulting from non-adherence to postpartum sex taboos

Markers	Postpartum period
Physical outcomes	<ul style="list-style-type: none"> -Poor weight [too light, has no kilos, sudden weight loss]. -Weight marked on the gray and red fields of the growth chart. -Weak copper-colored / reddish hair. -Swollen cheeks -Sagging cheeks. -Abnormal thinness. -Swollen stomach. -Thin legs. -Big matured head for age. -Elevated shoulders. -Weak eyes [<i>macho yanapooza</i>]. -Pale, dry skin [<i>anapauka ngozi</i>]. -Wrinkled and elastic skin like an elderly person [<i>ngozi imejikunja / inavutika kama ya mzee</i>]. -Sagging flesh (<i>nyama zinalea / zinatepeta</i>).
Illnesses	<ul style="list-style-type: none"> -Frequent diarrhea. -Loose, whitish stool. -Whitish / milky vomits. -Unhealthiness [<i>hana afya</i>].
Fatal danger	<ul style="list-style-type: none"> -Death
Developmental milestones	<ul style="list-style-type: none"> -Unsteady and weak limbs. -Lack of strength to crawl, stand, or walk on schedule -Mental retardation. - Lack of strength to cry loudly.
Play and physical activity	<ul style="list-style-type: none"> -General body weakness (<i>mdhaifu</i>). -Lack of energy. -Not lively / lack of dynamism [<i>hachangamki</i>]. -Not playful. -Abnormal calmness [<i>kapooza kama zezeta</i>]. -Wretchedness [<i>mnyongemnyonge</i>].
Body immunity	<ul style="list-style-type: none"> -Intermittent sickness [<i>anaumwaumwa / magonjwa hayampitii mbali</i>]. -Frequent fever [<i>homa za mara kwa mara</i>].
Eating habits	<ul style="list-style-type: none"> -Eating too much. -Food craving.
Cognitive development	<ul style="list-style-type: none"> -Low intelligence (<i>akili yake ndogo</i>).

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Several of the participants depicted sexual intercourse during lactation as morally unacceptable behavior, referring to it as, for example, a dirty or filthy game (*mchezo mchafu*), or stupidity (*upuuzi / uwendawazimu*). They expressed the belief that the bodily substances—particularly the father’s sperm (*mbegu za mwanamme*) or semen (*manii / shahawa*) and the mother’s vaginal excretions (*uchafu wa mama*)—the body heat (*joto la mwili*), and the sweat (*jasho*) generated during sex can endanger the growth of a baby.

Box 1: A new pregnancy during the lactation period—an etiology of poor child growth

“P: In the past, I myself happened to spoil the growth of my second child (*nilimbemenda mtoto wangu*) ... [...] The problem was my pregnancy, as when you sleep with the baby, the warmth of my body hurts him. So, the baby became weak (*akanyongea*).

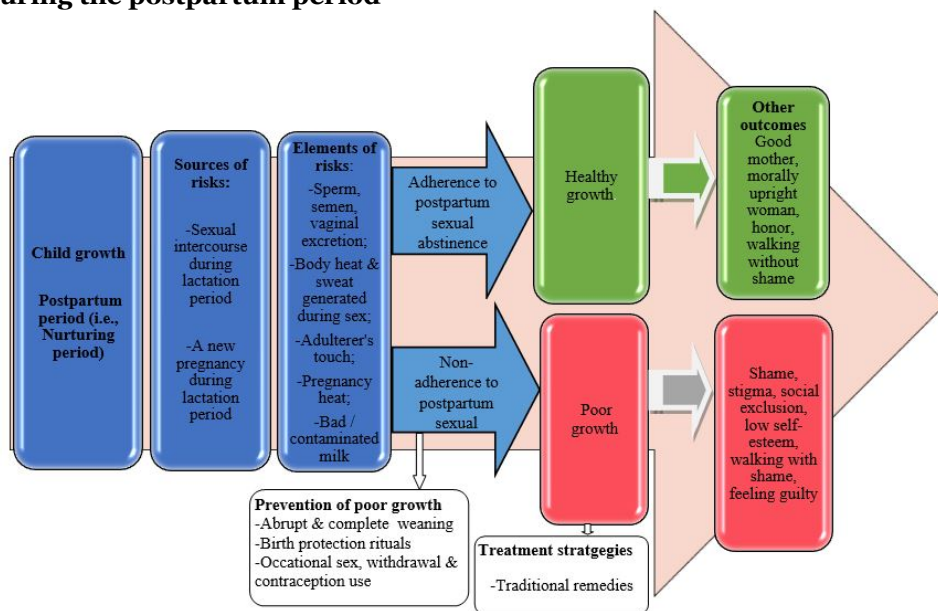
I: What did he look like?

P: He was getting frequent fever. And when we took him to the hospital (growth monitoring clinic), his weight was considerably dropping. As parents, we clearly knew that we had already ‘spoiled’ the growth of the baby (*tumeshambemenda*). The nurses asked, ‘Why does the weight of the child drop?’ We said, ‘We don’t know’. They said, ‘Please prepare *lishe* (a local porridge made of a mixture of cereals, mainly sorghum, maize, and groundnuts) for the baby.’ I said, ‘Okay.’ But in reality, I knew that I was already pregnant... [...] As I am pregnant, my body heat might be the thing that was making him *stunted* (a general term used to refer to poor growth). Initially, the child was very active (*alikuwa mchangamfu sana*) and very playful. But there came a time when he could not run from here to there (about 30 meters). You see?!...[...] In the past, he could take a can, go to the *bombani* (a nearby water point) and play with other kids. But as a result of my pregnancy, he became weaker (*alinyongea*) and his growth faltered.”

They also believed that genital excretions enter a woman’s breasts through the blood vessels, and pollute the milk. Thus, they posited, when the baby breastfeeds after the mother has had sex, s/he will contract diarrhea, vomit, and eventually lose weight. In the following, a traditional birth attendant explains the etiology of such an infection:

“When the dirties (semen) enter in your womb, they flow towards the breasts. If they can flow and make someone pregnant, do you think they cannot flow up to the breasts? That is when you affect the baby. As s/he sucks the milk, s/he also sucks the dirties. S/he then starts to vomit exactly same things as the man’s dirties. Surprisingly, even when the breasts are pressed, plenty of the man’s dirties come out. When you press, the milk is dirty. The milk that comes out is not the normal white or yellowish, no! The milk changes and become watery (*maziwa ya maji*). You then know that this one is causing poor growth in the baby. S/he does not care for the baby. S/he is continuing with her ‘things’ (sex).” (Traditional Birth Attendant, KII-#03)

Figure 3 Cultural construction of the etiology of poor child growth during the postpartum period



The participants also explained that, when the baby sucks in the couple's "dirties," these fluids flow and spread to the baby's limbs, weaken her/his joints, and render her/him unable to stand or walk:

"When a man 'penetrates' you (sex), the seeds (sperm) that he pours into you go to your breasts. So, when you breastfeed, the baby sucks those seeds of a man. The seeds then reach up to here (showing the knees). Then the baby's joints become weak (ananyong'onyea viungo). It is because of those seeds." (Older woman, FGD-#05)

Additionally, the participants said they believe that engaging in sexual intercourse generates body heat [*joto*] or sweat [*jasho*] that is harmful to a baby's growth because it (1) makes the mother's breast milk hot; and (2) it causes the child to become ill and weak overall, particularly if one of the parents was touching or carrying the baby before s/he had washed her/his body properly. The participants expressed the belief that like ingesting genital fluids, sucking in hot breast milk can cause a baby to experience vomiting, diarrhea, and weak limbs. While occasional sex for the father of a breastfeeding baby is perceived as less harmful, sleeping with another man, not the biological father, was feared as a lethal danger as it was believed to expose the baby to a foreign body heat and semen/sperms which are incompatible with her/his blood.

(2) Risks associated with a new pregnancy while lactating (*kukatikiza*)

According to the participants, another reason why the parents having sexual intercourse during the postnatal period endangers the growth of a breastfeeding baby is that it can expose the woman to an early pregnancy during lactation. Conception during the breastfeeding period—which is locally referred as *kukatikiza* or *kumruka*

mtoto i.e. skipping over a child)—was characterized not just as a threat to child growth, but as a lethal danger. The participants said they believe that the unborn baby generates harmful heat (*joto la mimba*, literally, pregnancy heat) that alters the mother's body temperature, which, in turn, spoils her breast milk by making it hot, light (*maziwa mepesi*), yellowish, or brownish. If a mother does not notice that her body temperature has changed and continues to breastfeed, her baby's growth or life can be endangered. Many participants believed that when the baby sucks "dirty milk" (*maziwa machafu*), s/he will suffer from diarrhea, vomiting, and poor motor development. The breast milk of an expectant mother—which was culturally framed as "*the milk of the baby in the womb*"—was also described as toxic to the breastfeeding baby, based on the perception that the milk is then incompatible with the physiology of the baby who has already been born. Phrases like "*s/he has sucked her fellow's milk*" were commonly used in the participants' explanations of the dangers associated with the breast milk of an expectant mother.

The participants warned that in addition to spoiling the mother's breast milk, the heat of a new baby (*joto la mimba*) can cause the breastfeeding baby to become ill (especially with fever), lose weight, and experience overall body weakness (*kunyongea*), particularly when the mother holds, cuddles, or sleeps with the baby. These dangers are said to exist regardless of whether the baby is still breastfeeding or has been weaned:

"What affects the growth of the (breastfeeding) baby is *joto* (body heat). Let's say I become pregnant while I still have this little baby (pointing to her little baby). I must embrace her when we sleep. That *joto* is what spoils her. The *joto* of the pregnancy is very dangerous. It spoils the (breastfeeding) baby. That's why you are not allowed to sleep with her (breastfeeding baby), as when you sleep with her, the *joto* of her fellow in the womb affects her." (Mother, FGD-#01)

6.4.2 Positioning of men and women in the context of postpartum sexual abstinence

While both parents should abstain from sex for a prolonged period of breastfeeding to avoid endangering their child's growth, abstinence was emphasized more for the mother than for the father. This appears to be because a woman is culturally constructed as *mlezi* (the one who nurtures), and as the parent who better understands the value of the baby because she experienced the labor pains (*uchungu*) of bringing the baby into the world. By contrast, as men are believed to be sexually weaker than women, and thus to have no ability to remain sexually abstinent for longer periods of time, male extramarital sexual relations during the postpartum period are culturally condoned. Many of the women upheld male sexual dominance by characterizing a father's extramarital affairs during the breastfeeding period as responsible acts, based on the premise that this behavior protected the baby from poor growth. Additionally, most of the women said are tolerant of their partner having extramarital affairs for the sake of their child's healthy growth:

"It is better for him [partner] to get out of wedlock [extramarital sex] provided that my child grows. Even when he comes back home late, I usually don't ask him anything. Even if I hear that he has a girl [lover] outside, I never ask him anything." (A mother of an under-five child, unknown age)

Some of the women even reported that they are pleased when their partner has extramarital sex during the breastfeeding period, as it reduces the pressure on them to have sex, and gives them the freedom to concentrate on nurturing their baby (*kulea*). Additionally, in a few of the FGDs with mothers, a man who had no extramarital relations during the breastfeeding period was described as *msumbufu* (a nuisance), and thus as a problem for a morally upright nursing mother:

“P1: When he returns home at 12 midnight (12:00pm), that means that he has already fulfilled his sexual needs. When he reaches home, what he does is to take a bucket of water and have a bath. Then he sleeps.

I: As a mother, what do you think of that?

P1: I find it to be very good because I don't want any nuisance, I'm nurturing my baby. I know I am nurturing my baby well, so s/he grows well as s/he has good care (*malezi bora*).

P2: In terms of my freedom to nurture my baby, I also think it (men's extramarital affairs) is okay. I am the one who experiences the labor pains when my pelvis widens for the birth of the baby. So, I just perceive it to be okay. The one that goes out (has sex with other women) is better. Let him go, as long as he provides for the family as usual. Let him go and do his work (sex) (laughing). No more trouble! My sister, giving birth is too tough (laughing). You take off all of your clothes (laughing).” (Mothers, FGD-#06)

While the majority of the women said they are tolerant of their partner having extramarital sexual affairs during the postpartum period, a few of them said they feel compelled to resume sex early out of fear of contracting HIV:

“It is hard to wait (abstain) for so long. A man cannot tolerate it. He goes out (having extramarital sex). That is when the diseases come. Imagine you are abstaining for two years, your fellow (partner) goes out, he gets HIV, when he comes and penetrates you (*akikuingilia*). That is when he infects you.” (Mother, IDI-#02)

According to the participants, marrying more than one wife is a strategy that men use to cope with these postpartum sexual restrictive norms; as when one wife is nursing, the husband can turn to another wife to fulfill his sexual needs:

“I: What are men's coping strategies during the lactation period?

P1: Let me answer that question honestly (all participants laugh). Nowadays, most of us fathers see that it is better to add another woman so that when this one is nurturing (breastfeeding), I go to the other woman. I marry another wife, a legal wife (laughter).

P2: It works perfectly well when you have two wives. But if you only have one wife you need to use an extra IQ (*akili ya ziada*) to fool your wife with kind words so that she upholds abstinence while you secretly eat out (extramarital sex).” (Fathers, FGD-#05)

It was, however, acknowledged by fathers of under-five children that having multiple wives would limit their ability to provide for their children, as maintaining multiple families would be difficult given their meager resources.

6.4.3 Shame or honor as the outcomes of non-/adherence to postpartum sex norms

Honor

Based on the community's gender role schemas, maintaining sexual abstinence during the breastfeeding period (*kipindi cha kulea*) was considered an important cultural quality of a strong, "morally upright woman" and "a good mother":

"A good mother is one who nurtures her baby well (abstaining from sex during the lactation period). She is not sexually active; after giving birth, she knows that 'I have one job, to nurture my baby'. She is never 'sick' [sexually aroused]. She can even fight with her husband to avoid sex. When her husband touches her, she tells him, 'Stop it! Let me nurture my baby.' Until the baby has grown older, that is when she meets with her husband." (Older woman, FGD-#02)

Successful abstaining from sex during breastfeeding not only provides a mother with the satisfaction of knowing that she is helping her child grow; it ensures that the community, and particularly the older women who safeguard the postpartum sexual abstinence norms, will honor her for doing what is morally right:

"After giving birth, if you do not involve yourself with sex, that is when we say that you nurture your child well. Your baby will eventually have healthy growth. Even elders will say 'Ooh, she is indeed nurturing her baby well.'" (Older woman, IDI-#05)

Shame

In case of early pregnancy or when a breastfeeding baby portrays signs associated with non-adherence to postpartum sexual abstinence norms, blame is laid on a mother for being unable to remain abstinent, or to resist pressure to have sex from her husband. A woman who becomes pregnant while still nursing or who has a baby who appears to be growing poorly was described using negative stereotypes such as: "*sexual maniac (ana kiranga)*"; "*dirty woman (mwanamke mchafu)*"; "*reckless*"; "*stupid*"; "*too lusty*"; and "*overly jealousy of her husband.*" The violation of postpartum sexual norms was severely criticized by the female participants, and particularly by the older women, with comments such as: "*She has spoiled the growth of her baby (amemharibu mtoto)*"; "*She did not provide good care to her baby*"; "*She uses her baby (anamtumia mtoto)*"; and "*She has played with the health of her baby.*"

Most of the mothers reported that they are very strict about remaining abstinent while breastfeeding, particularly during the first postnatal year, in order to meet social expectations for mothers, to ensure that their babies grow well, and to avoid bringing shame on themselves and their families. Some said they waited to have sex until when their babies could walk, as walking is an important cultural marker of healthy growth and of the parents' adherence to abstinence:

"Sex does not happen to me now. I'm afraid. My baby's growth will be spoiled (atabemendeka). [...]. I would rather wait until my child starts to walk." (Mother, IDI-#01)

The participants reported that mothers are often stigmatized if they have a child whose poor growth suggests that they have been violating sexual abstinence norms. For example, mothers may be subjected to judgmental attitudes, gossip, social exclusion, and public shaming, usually in response to visible signs and symptoms perceived to result from the parents' sexual behavior. Many of the participants said they see children with poor growth and their mothers as laughable; recounting that when these families appear in public, they are often ridiculed and gossiped about by others:

“We Masai are used to holding the cattle. So, when s/he (the one with poor growth) holds it s/he trembles (lacks the energy to hold it). Even her fellow children know that this one has already been spoiled (*amebemendwa*). They laugh. You also laugh at her/him saying, ‘Aaah, I did a good job to nurture my baby, but my fellow has spoiled her child’s growth’ (laughing). When she passes, the mother’s eyes become less confident, s/he feels shy as her baby is falling down frequently (lacks strength to walk) [...]. It is shameful even before men, as they will say, ‘Do you see that woman, she has spoiled her baby.’ They start to gossip. Is that not a shame?” (Older woman, FGD-#07)

A child whose poor growth was attributed to the violation of sexual norms was referred to by the participants as “spoiled” (*mtoto aliyeharibiwa*) or “screwed” (*mtoto aliyechezewa / aliyefanyiwa matusi/ngono*). Many of the participants described a child with that condition as socially unacceptable, noting that unlike a healthy-looking child, the community members will avoid carrying her/him:

“First of all, s/he is too weak and her/his skin is folded like that of an elderly person (*ngozi imejikunga kama ya mzee*). You never feel interested in carrying her/him. S/he becomes her/his ‘mama’s baby’ [*mtoto wa mama*], and never the neighbors’ baby. When a child is healthy, a neighbor usually carries her/him, the mother does not struggle to carry her/him alone. But when s/he shows signs that s/he has been spoiled (*amebemendwa*), s/he ends up being *mtoto wa mama*.” (Father, FGD-#-02)

The participants reported that the stigmatization of “spoiled babies” (*ambao wamebemendwa*) and the blame placed on their mothers caused these mothers to walk around with shame and low self-esteem, and limited their freedom to interact with others:

“It is a big shame for a woman. You feel ashamed particularly when you are around other women whose children look healthy but yours do not. You then tend to stay alone at home; you never go out to chat with fellow women, as they will laugh at you.” (Mother, IDI-#10)

According to the participants, the stigma associated with poor growth ascribed to *kubemenda* was even apparent in interactions with health workers who were providing health services at child care clinics:

“You find that your child has been spoiled (*amebemendwa*) but your fellows’ children have not. Even when you go to the doctor (health worker) s/he must scold you. S/he tells you, ‘You have become ‘too dirty’ (having sex), and are spoiling your baby (*mpaka umembemenda mtoto wako*).’ S/he must scold you

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because when s/he looks at your colleagues' babies, s/he sees that they are healthy, but your baby has swollen cheeks, weak legs, and a swollen belly.” (Older woman, FGD-#02)

While most of the participants said they consult health facilities and growth monitoring clinics primarily when a child is having frequent fevers or has insufficient weight, they added that the fear of being stigmatized may cause caregivers to avoid accessing and utilizing growth monitoring services and medical care for their children. For example, a mother who conceived prematurely (*kukatikiza*) may fear being chastised by health workers when she seeks medical care for her child, especially if her child's health suggests that she has violated sex taboos:

“I: When a child is noted to have been spoiled, is there any treatment that people use to rectify her/his growth?

P: A big percent of them (mothers) hide themselves. You find that a mother is afraid to take the child to the hospital as she has two little children, so she decides to leave behind the older one and only take the newborn. That is what a big percent of women do. They are afraid that when they go there, they will be scolded (*watachambwa*) by nurses. That is why the child whose growth has been spoiled (*aliyebemendwa*) is left behind, and the new baby is taken to the dispensary (child care clinic).” (Father, FGD-#03)

A community health worker (CHW) remarked that *kubemenda* is a problem in the community. When he was asked whether during growth monitoring clinics he has ever identified a child whose poor growth was indicative of non-adherence to postpartum sexual abstinence norms, he replied:

“Yes, some of them have been spoiled (*wamebemendwa*). I can recognize it. You find that a mother has three little children at the ages for growth monitoring. This means that they are all under-five. So, I know that there is a dirty game that parents are playing on the baby. It is not acceptable to create three children within five years.” (Community health worker, KII-#01)

The above findings indicate how socio-culturally shared values become a template for guiding individual behavior, and for morally judging oneself and others. They also show that *kubemenda* schemas have permeated the biomedical system in the study community, as even knowledgeable health workers apply them when providing medical services.

6.4.4 The influence of the cultural context on child care practices

It appears that caregivers' beliefs about the consequences of sexual pollution during the lactation period guided their actions, including their decisions about which preventive and curative child growth strategies to use. In this section, we show how caregivers' beliefs about the risks of having sex during the early postpartum period shape how they prevent and treat poor growth in their breastfeeding babies.

Strategies for preventing poor growth ascribed to kubemenda

As we noted earlier, the dominant traditional strategy for preventing a child's growth from being endangered by sexual activities is for the parents to abstain from sexual intercourse for the entire breastfeeding period. To avoid sexual temptation, couples are supposed to sleep in separate beds or rooms as soon as the baby is born.

Alternatively, the mother and the infant may move into her parents' or her in-laws' home for an extended period of time, and return when the baby is able to walk. When the early resumption of sex between the partners becomes necessary, a number of strategies may be used to minimize a child's vulnerability to poor growth, including engaging in birth protection rituals, having only intermittent sexual relations with immediate bathing, using the withdrawal method, using condoms or other contraception, and abruptly weaning the child.

In this analysis, abrupt weaning emerged as a common practice used by caregivers to avoid poor child growth. This is particularly likely to occur when (a) a mother conceives early (*kukatikiza*); (b) the partners feel the need to resume sex earlier; (c) it appears that the child has grown sufficiently, especially if s/he is able to walk independently; (d) the pressure on the partners to have sex becomes unbearable; or (e) the child shows signs of poor growth that are indicative of a parental violation of sex taboos. In most cases, when an immediate weaning is deemed necessary, the child relies on porridge to survive. Following the cessation of breastfeeding, the child is customarily taken to a grandmother to prevent her/him from being harmed by the expectant mother's body heat (the unborn baby's heat).

Seeking health care to treat poor growth attributed to kubemenda

Based on their cultural meaning systems, the caregivers in the study setting expressed a strong belief that Western medicine cannot treat a baby whose poor growth is the result of the violation of postpartum sexual abstinence norms. According to the participants, traditional remedies are more effective in such cases. Thus, the majority of the parents reported using such remedies when they noticed the signs of poor growth in a child ascribed to *kubemenda*, including bowel incontinence; diarrhea with white-colored stools; insufficient strength to crawl, stand, or walk on schedule; or a swollen stomach and swollen cheeks. As in the case of the prevention strategies, which types of therapists, herbal remedies, and procedures the participants turned to depended on the specific customs of their tribe. Among the health resources the parents reported consulting when a child's poor growth was indicative of *kubemenda* were traditional healers (*waganga*), elders (*wazee*), TBAs (*wakunga*), and people with appropriate knowledge about traditional herbs:

I: What do people in your community do when they notice that a child's growth has been spoiled?

R: We take them to the traditional healers for some cleansing so that they can regain their body strength and walk again." (Mother, FGD-#01)

"When you see that the baby has contracted excessive diarrhea, or has frequent fevers, you realize that the condition of this child has gone astray. You consult an older person (mzee), s/he then finds mtaalam (traditional expert) who comes and 'ties a child with medicine' (anamfungam toto dawa). We usually do not take the baby to the hospital. We use our local medicines (dawa za kienyeji). When given the medicine, the baby starts to walk again and gets well." (Older woman, IDI-#2)

6.5 Discussion

This ethnographic study aimed to provide a detailed analysis of cultural beliefs regarding the link between postpartum sex taboos and child growth and development, and how these beliefs influence child care practices, in a low-income rural setting in

Southeastern Tanzania. Parental non-adherence to postpartum sexual abstinence norms emerged as the dominant cultural explanation for ill health / poor growth and development among the children in the study community. As a dominant discourse, this set of beliefs shaped parents' behavior and decisions about the preventive and curative services they considered relevant to child growth. The current study extends previous research conducted in Tanzania on sex taboos as a dominant discourse situating maternal and child health during the postpartum period (Mabilia, 2000; Mbekenga et al., 2013) by providing important insights into how cultural norms influence childrearing practices and caregivers' attention to episodes of poor growth of their children on the basis of symptoms and perceived etiology. At the policy level, this analysis points to the need to reconsider how health education and promotion messages about poor child growth are communicated to members of the community. In the following discussion, we explain how our findings may be relevant for public health policy.

6.5.1 Sexual intercourse and a new pregnancy as etiology of poor growth

In this study, the term *kubemenda* was used by participants to refer to an 'act' of causing poor growth to a child through parental non-adherence to postpartum sexual abstinence. The postpartum sexual abstinence was observed mainly to prevent a child from ill-health/poor growth. The relevance of postpartum sexual abstinence in promoting healthy child growth has also been highlighted in studies that have shown how this norm relates to HIV (Achana et al., 2010), breastfeeding and sexuality after delivery (Desgrées-Du-Loû & Brou, 2005; Mabilia, 2005), and parenting (Ntukula, 2004). The caregivers' belief that a child's poor growth and development can be attributed to the parents' failure to adhere to postpartum sexual abstinence norms clearly differs from biomedical explanations of the etiology of childhood illnesses and poor growth. These findings imply that as biomedical experts, we need to understand how caregivers assign meaning to the growth of their children, and to take such meaning-giving into account when designing and implementing interventions aimed at promoting child growth and development.

The observation that fathers are allowed to enjoy sex with other women while mothers are expected to remain abstinent is worth noting, as in addition to representing a source of emotional violence for wives (Desgrées-Du-Loû & Brou, 2005), this double standard could reproduce gender inequalities with negative health implications for families, including increasing their risk of HIV infection (Mbekenga et al., 2013). Couples should make decisions about postpartum sexual abstinence jointly, and be knowledgeable about safe sex.

Our analysis found evidence that there have been some cultural changes regarding postpartum sexual norms in the younger generation, as younger couples appear to be observing shorter periods of sexual abstinence. Similar findings have been reported from other communities in East Africa (Mbekenga et al., 2013), West Africa (Achana et al., 2010), and Southern Africa (Flax, 2015). The older parents' criticisms of the younger generation's failure to adhere to these sexual rules reported in this study were expected, as "the pace of culture change can be overwhelming to individuals when the experienced culture change requires a fundamental shift in thinking" (LaRossa, Harkness, & Super, 1997). However, even though we found signs that cultural changes have been occurring in the study setting, we also observed that mothers with a malnourished child were often stigmatized for not adhering to sexual norms. These findings suggest that while schemas and meanings within cultures change over time

(Garro, 2000), some elements of a given culture are retained if they are deemed important (Popenoe, 2012). Thus, we would argue that postpartum sexual taboos are still powerful cultural explanations for poor child growth, even as the meanings of some concepts, such as perceptions regarding the appropriate duration of abstinence, change.

6.5.2 Abrupt cessation of breastfeeding as a strategy for preventing poor child growth

Whereas cultural schemas are a necessary part of individual actions, they are not always beneficial, as some turn out to have adverse effects (Bailey & Hutter, 2006; Strauss, 1997). In this study, we found that the schema regarding the risks associated with having sexual intercourse and a new pregnancy during the postpartum period can lead to harmful behaviors, which, if left unaddressed, can not only jeopardize ongoing efforts to promote infant breastfeeding, but can endanger the lives of babies. The belief in *kubemenda* can cause caregivers to stop breastfeeding abruptly and prematurely. This practice is problematic, as breastfeeding has been shown to have benefits for the general health, growth, and development of infants (Munblit et al., 2016; Picciano, 2001; United Nations Children’s Fund, 2018; Vennemann et al., 2009; Victora et al., 2016). There is evidence that the premature weaning of infants is dangerous (WHO, 2003), particularly in the context of Tanzania, where rates of infectious disease are high (MoHCDGEC, 2016). The premature transition to mixed feeding increases the risk of diarrhea, infection, malnutrition, and slow development in infants (De Zoysa, Rea, & Martines, 1991; Grummer-Strawn & Mei, 2004; Harder, Bergmann, Kallischnigg, & Plagemann, 2005; Howie, Forsyth, Ogston, Clark, & Du Florey, 1990; WHO, 2003), which in traditional lore could be attributed to *kubemenda*. In addition, the weaning regimens used in the context of *kubemenda*—i.e., taking a recently weaned infant with poor growth to a grandmother’s home for recovery—should be seen as especially problematic, as a change in caregivers may increase the infant’s vulnerability (Howard & Millard, 1997).

6.5.3 Use of health care services in the context of *kubemenda*

As our analysis has shown, the cognitive representations of *kubemenda* are also structured to guide the choice of curative actions. In the participants’ cultural model, the symptoms and signs of malnutrition in breastfeeding babies are erroneously attributed to the quality of the mother’s milk, which is believed to have been “polluted” by the couple’s genital excretions and by the harmful body heat of the mother if she is newly pregnant. Similarly, episodes of child diarrhea, which are particularly common when a child starts to crawl/walk and when supplementary food is firstly introduced into the child’s diet (DHS-MIS, 2016), are attributed to the resumption of intercourse. In most such cases, traditional rather than biomedical care is sought to remedy health or growth problems in children. Similar approaches to managing childhood diarrhea that is perceived to result from the violation of sexual taboos have been reported elsewhere in rural Tanzania (Mabilia, 2000). In addition, the role of folk beliefs in caregivers’ decisions to seek care for their children from traditional healers rather than from health professionals for other health issues has been reported elsewhere in Tanzania (Mchome et al., 2019; Metta et al., 2015; Muela, Ribera, & Tanner, 1998). The tendency to turn to traditional healers we observed in this study should be taken seriously, as it may lead to delays in the diagnosis and the treatment of childhood illness. This issue is particularly critical, as dehydration caused by severe diarrhea is a major cause of morbidity and mortality among young children in Tanzania (MoHCDGEC, 2016). The findings for our study setting, as well as results for the

Kondoa district (Mabilia, 2000), may explain why the parents of an infant in Tanzania who becomes ill, particularly in a rural setting, are far less likely to seek professional advice if the child has diarrhea (43%) than if the child has an acute respiratory infection and fever (MoHCDGEC, 2016).

While the participants' reliance on traditional remedies could be mainly rooted in their cultural models, it likely also reflects their limited access to health resources, as there is no health facility in the study village. Thus, to promote the early diagnosis and the treatment of the symptoms of poor growth in children, and to decrease the likelihood that harmful traditional practices will be employed, health programmers should create synergies between medical health personnel and community resource persons (CORPs), such as older women, TBAs, and traditional healers in challenging traditional norms and increasing access to medical care. Such an alliance should focus on improving the capacity of CORPs to educate community members on the etiology of poor child growth, and to refer children with ill health or poor growth to medical clinics. However, as Mchome et al. (2019) observed, more operational research is needed to determine how CORPs can be successfully integrated into interventions targeting poor growth in children.

6.5.4 Naming and shaming of mothers and their poorly growing babies

In our study, we found that mothers and their poorly growing babies were subjected to stereotypes and acts of stigmatization by community members. Similar behaviors have been reported elsewhere (Mabilia, 2000; Mbekenga et al., 2013). As Narayan, Chambers, Shah, & Petesch, (2000) have pointed out, stigma and shame can result in increasing isolation, as people become less able to participate in the traditions that bring communities together. In this study, we found that when a baby showed signs of poor growth considered indicative of *kubemenda*, the baby was often stigmatized, and the mother was frequently blamed and shamed, which seems to have resulted in the mother having low self-esteem, and less freedom to interact with others in the community. Sen (1993) has described “being ashamed to appear in public” and “not being able to participate in the life of the community” as absolute forms of deprivation equal to hunger. Our observation that shame and stigma were associated with child malnutrition in the study setting is worth noting, as such behavior may lead to injustices being directed at mothers and their babies. Additionally, from a psychological point of view (Rigby, 1969), as asserted in (Mabilia, 2000), and from a capability perspective (Sen, 1993), placing blame on mothers can be detrimental to their mental well-being, and can negatively influence their ability to care for their children.

Furthermore, the current study noted some weaknesses at health facility level in relation to child care services. The participants reported that health workers have stigmatized and scolded mothers during child growth monitoring when their babies had poor growth outcomes, particularly if they suspected that *kubemenda* played a role. As Tangney & Dearing (2002) observed, “shame is a painful and devastating experience in which the self is painfully scrutinized and negatively evaluated. . . [it] is likely to be accompanied by a desire to hide or escape from the interpersonal situation in question” (Quoted in Reyles (2007). Similarly, the current study found that the shaming and scolding of caregivers by health care providers when their children were not growing well disincentivized mothers from taking their newly weaned infants (as a result of another pregnancy) or their poorly growing children to the maternal and child health clinics. Despite their biomedical knowledge, health workers may have

been influenced by the *kubemenda* schemas in their cultural context. The stigmatizing behavior observed among health workers is worth noting, as (1) it may interfere with children's access to health care, and could lead to worse health and development outcomes; and (2) it violates the fundamental human rights of mothers and their children, including their rights to receive respectful, dignified, and humane care during growth monitoring (United Nations General Assembly, 1948, 1993). An association between the stigma of malnutrition and children's access to health care has also been reported in different contexts (Bliss, Njenga, Stoltzfus, & Pelletier, 2016; Howard & Millard, 1997; Mull, 1991; Nayar, Stangl, De Zaldondo, & Brady, 2014). The attitudes of health workers that were reported in the current study highlight the need to insist that health care providers separate their preconceived schemas from their professional duties.

6.6 Strengths and limitations of the study

As this study was conducted with a small group of people in a specific setting, the results should be viewed as contextual, and limited to this kind of setting. Nevertheless, because the study participants included caregivers from different ethnic backgrounds, and given that prolonged postpartum sexual abstinence has been reported as the dominant traditional discourse underlying child health in other settings in Tanzania (Howard, 1994; Mabilia, 2000; Mabilia, 2005, Mbekenga et al., 2013), it is likely that the practices reported in this study are also found elsewhere.

6.7 Conclusions

In the study community, poor child growth is often attributed to the parents having violated sexual abstinence norms during the postpartum period. Thus, prolonged sexual abstinence is a culturally acceptable strategy for promoting healthy growth—and for preventing poor growth—in children. Although the intention of the traditional discourse is to support and encourage child growth by promoting effective breastfeeding, it turns out to be a belief that has adverse effects, as it often leads to premature weaning in response to the early resumption of sex and a new pregnancy. Thus, this practice interferes with the right of children to be breastfed, in line with the recommendations of UNICEF and the WHO (United Nations Children's Fund, 2018), WHO, 2018). It also has implications for mothers' and children's fundamental human rights, as it subjects them to stigmatization by community members, including by health workers. Moreover, the traditional discourse motivates caregivers' responses and choices of curative services, with traditional healers being preferred to biomedical practitioners in handling episodes of poor growth in children. Based on our findings, we argue that to promote effective breastfeeding and healthy child growth in our study community and in similar settings in Tanzania, policy-makers and nutritionists should seek to understand the local knowledge of and the schemas regarding poor child growth people employ in their community context when designing and implementing interventions.

6.8 References

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Chapter 7

“When I Breastfeed, It Feels as if my Soul Leaves the Body”: **Maternal Capabilities for Healthy Child Growth in Rural Southeastern Tanzania**

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Abstract

The burden of childhood stunting in Tanzania is persistently high, even in high food-producing regions. This calls for a paradigm shift in Child Growth Monitoring (CGM) to a multi-dimensional approach that also includes the contextual information of an individual child and her/his caregivers. To contribute to the further development of CGM to reflect local contexts, we engaged the Capability Framework for Child Growth (CFCG) to identify maternal capabilities for ensuring healthy child growth. Ethnographic fieldwork was conducted in Southeastern Tanzania using in-depth interviews, key informant interviews, participant observation, and focus group discussions with caregivers for under-fives. Three maternal capabilities for healthy child growth emerged: (1) being able to feed children, (2) being able to control and make decisions on farm products and income, and (3) being able to ensure access to medical care. Mothers' capability to feed children was challenged by being overburdened by farm and domestic work, and gendered patterns in childcare. Patriarchal cultural norms restricted women's control of farm products and decision-making on household purchases. The CFCG could give direction to the paradigm shift needed for child growth monitoring, as it goes beyond biometric measures, and considers mothers' real opportunities for achieving healthy child growth.

Keywords: capability approach; capability framework for child growth; maternal capabilities; child growth; breastfeeding; growth monitoring; Tanzania; ethnography

7.1 Introduction

The problem of poor growth among children under five in different regions in Africa is becoming increasingly acute [1,2]. The current evidence indicates that in African countries, 58.8 million (33%) under-five children are stunted and about 14 million are wasted, and 9.5 million children were overweight in 2018, up from 6.6 million in 2000 [3]. In the Sub-Saharan region, 33% of under-five children are stunted, 2.3% are wasted, and 3.5% are overweight [1]. In Eastern Africa, 35.2% of under-five children are stunted, 1.6% are wasted, and 4.7% are overweight (Ibid). Tanzania is no exception: it is among the 10 countries with the highest burden of childhood stunting (i.e., 34%). Tanzania also has the double burden of malnutrition, with 28% of women and 4% of under-five children suffering from overweight and obesity [4].

To prevent children from becoming malnourished, a number of initiatives have been implemented at both global and local levels. Child growth monitoring (CGM) is one of the initiatives designed to enable timely identification of (physical) growth faltering and appropriate intervention. CGM has been incorporated into the health policies of most countries, including Tanzania, and is reflected in child care practices [5]. For decades, the discourse on child growth has been dominated by the biomedical paradigm, which constructs CGM as “the process of following the growth rate of a child in comparison to a standard by periodic anthropometric measures” [1]. In this discourse, a mono-dimensional approach that focuses only on anthropometric indicators has been used not only to identify at-risk children, but also to develop interventions to promote healthy growth. It has become the norm for health workers and public health programmers to evaluate the growth of under-five children and to intervene based on information about changes in weight and height [5–9].

Child growth indicators have been used to monitor progress in meeting the Millennium Development Goals, particularly MDG 4—reduction in under-five mortality rate—and MDG1—poverty reduction [10]. However, CGM has been criticized for not consistently improving the health and nutrition of under-five children [8,11]. While efforts were made in Tanzania to reach the MDG targets, the rates of childhood malnutrition, and particularly of stunting, declined only slightly during the MDG era, [12]—i.e., from 48% in 1999 to 43% in 2010. The current trend also shows that Tanzania is still far from achieving the Sustainable Development Goals (SDGs)—specifically goal 2 of “zero hunger” that aims to end all forms of malnutrition by 2030—as it still has unacceptably high (33%) levels of childhood undernutrition [4]. Surprisingly, the burden of stunting in Tanzania is also persistently high (above 40%) even in high food-producing regions [4]. Relying on anthropometric indicators to understand child growth provides only a partial answer to both “who” and “why” questions [7]. While they are important tools for identifying who is exhibiting healthy growth and who is not, anthropometric indicators provide neither further information about the socioeconomic or cultural characteristics of the children, their caregivers, or their communities nor a deeper understanding of why some children are malnourished (ibid). The paradoxical question of why the prevalence of childhood stunting is high in a context of plenty calls for an approach to assess child growth that captures not only anthropometric outcomes, but also contextual information on individual children and their caregivers. This information is important, as children (and their caregivers) lead their lives under a variety of conditions [13] that shape their growth differently.

In Tanzania, several scientists and scholars have contributed to our understanding of contextual determinants of poor growth, which include child malnutrition at the household and societal level [14–18]. However, as most of these studies use biomedical–anthropometric-indicators, they hardly capture the complexity of the growth of specific children [7]. In other words, they do not examine the contextual factors that lead to diversities among children and caregivers in terms of what they can or cannot do to achieve healthy growth. Information on the local realities that contribute to healthy child growth is crucial, as it would help health workers provide appropriate advice to caregivers during CGM, and it could be used in policy-making processes aimed at allocating resources more equitably and reducing inequalities (ibid).

Assessing well-being by considering what individuals can or cannot do with their resources is emphasized in Amartya Sen’s capability approach from the field of welfare economics [19]. In this paper, we use concepts from Sen’s capability approach to shed light on maternal capabilities that contribute to healthy child growth in Morogoro region. We discuss how each of the capabilities is influenced by individual and contextual factors, and how they, in turn, shape healthy child growth. Our study is one of the few empirical studies [20] that applies the capability approach to understanding healthy child growth.

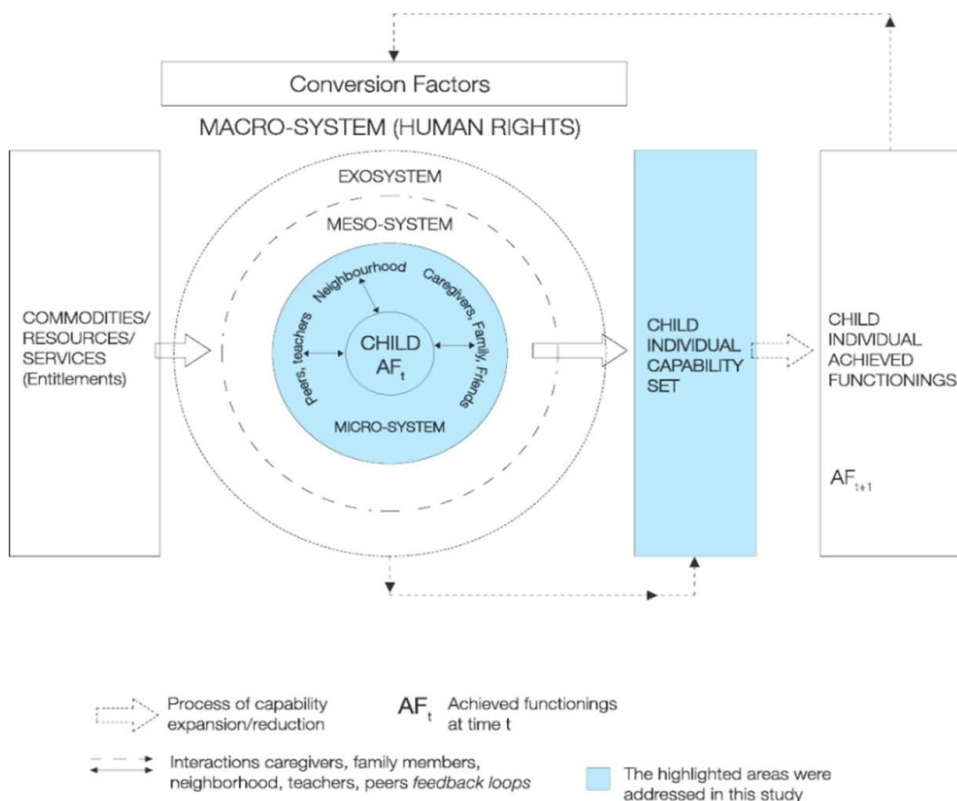
7.2 Capability Approach: A Theoretical Framework

First developed in the work of Amartya Sen [21], the capability approach was used to explain why people starve when there is plenty of food in their locality. The key thesis of the capability approach is that when assessing an individual’s well-being, the primary focus should be on what people are effectively able to do and be, i.e., their capabilities. Capabilities represent the “real opportunities” of an individual to do or achieve something [22]. Drawing conclusions about well-being based on people’s capabilities is crucial, as individuals differ in their abilities to transform the available resources into achieving what “they value” [19], such as “healthy child growth” [6,7]). The diversity of people’s capabilities is shaped by the independent or interactive interplay of conversion factors that enable or disable the conversion of resources into functionings [22]. Conversion factors are categorized into three groups: personal, social, and environmental [22]. *Personal conversion factors* are internal to the person (e.g., physical condition, age, sex, and reading skills). *Social conversion factors* stem from the wider society where a person lives (e.g., public policies, social norms, power relations related to class, gender). *Environmental conversion factors* represent physical characteristics surrounding the individual (e.g., climate, housing conditions, and road conditions). According to the capability approach, in the process of achieving what they value, people exercise agency, which is the freedom and the ability to choose from the available options to pursue one’s goals [19]. From the capability approach perspective, an individual’s values and choices are shaped by the specific socio-cultural context in which s/he lives [22]. Accordingly, people make choices that are embedded in their context-specific values (ibid).

In the context of nutrition and child growth, the capability approach suggests the need for a multi-dimensional approach to assessing child growth that goes beyond applying anthropometric measures to evaluate what individual caregivers are effectively able to do and be, and their choices for achieving healthy child growth. As Haisma et al. [6] clearly articulated, child growth is complex and multi-dimensional, and efforts to

evaluate it should reflect that complexity, rather than being narrowly focused. Recently, a Capability Framework for Child Growth has been developed that reflects this multi-dimensional perspective on child growth [7]. This study applies the CFCG (for more details, see Figure 4) to identify capabilities for achieving healthy child growth.

Figure 4 Constitutive elements of capabilities framework for child growth (Yousefzadeh et al., [7]).



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7.3 Methods

7.3.1 Study Design

This paper draws on data gathered during three months of ethnographic fieldwork conducted in Malangali, a rural village in Kilosa District, Southeastern Tanzania. The principal investigator, accompanied by a research assistant, both women with a background in medical sociology, lived in the village for three months (in two separate periods) to conduct the fieldwork. From July to September 2015, the researchers conducted a household census and conducted 19 focus group discussions. From August to September 2016, we conducted 30 in-depth interviews and five key

informant interviews. Participant observations were made throughout the fieldwork period. The findings in this paper are mainly drawn from data collected through participant observations, focus group discussions, and in-depth interviews with biological mothers and fathers of under-five children, irrespective of their nutritional status, and key informant interviews with community health workers (CHWs) and traditional birth attendants (TBAs). As defined by the World Health Organization, the TBAs are persons who assist the mothers during childbirth, and have initially acquired their skills by delivering babies themselves or through apprenticeship to other traditional birth attendants [23].

7.3.2 Study Setting

The fieldwork setting of this research has been described elsewhere [24] i.e., chapter 5, but, in short, Morogoro region is considered one of Tanzania's "food baskets"—i.e., high food-producing regions—but has a relatively high prevalence of stunting (33%) among under-five children [4]. The rural location of Kilosa District, which has a high prevalence of infant malnutrition and anemia in a context of plenty, makes it an appealing choice for examining the capabilities that contribute to healthy child growth. The major income-generating activity of residents in this district is small-scale farming.

Others engage in petty trade, formal/skilled employment, and self-employment through different forms of unskilled manual labor. While most of the agricultural activities we observed were conducted by men and women alike with a shared aim of feeding the family, harvesting and storing the harvests were depicted as male responsibilities. Threshing maize (*kupukuchua mahindi*), taking care of children, and doing household chores were characterized as female tasks.

7.3.3 Recruitment of Participants

Recruitment of participants for key informant interviews: Key informants included community health workers (CHWs) and Traditional Birth Attendants (TBAs). Both CHWs and TBAs are important local health experts, consulted by parents about health and growth issues of their child. In the study village—just like in other villages in Tanzania—there are two CHWs; they are involved in routine child growth monitoring services in the village, and are linked to a dispensary. TBAs are consulted by mothers in relation to maternal issues. The two CHWs were recruited through the village chairman's support. The CHWs were then requested to link the researcher with TBAs, the second group of key informants in this research.

Recruitment of participants for in-depth interviews and focus group discussions: The participants in in-depth interviews and focus group discussions were recruited through the help of CHWs and local leaders, and through the researcher's social networks. Given their role in providing growth monitoring services to under-five children in the community, and thus having good knowledge of parents with under-five children, CHWs facilitated the identification of some mothers and fathers of under-five children for IDIs from the wider community. Some of the participants for IDIs were identified by the researcher from the wider community through individual social networks developed while living in the field, while others were identified from the clinics' attendees at the child growth monitoring clinic during participant observation. In this case, during her visits to the growth monitoring clinics, the researcher—in consultation with the CHW—explained the purpose of her presence at

the clinic to mothers, and identified mothers for in-depth interviews after their children's growth was assessed. Furthermore, the participants in the focus group were purposively recruited from the community with the help of the local leaders and other relevant gatekeepers. The researcher requested the local leaders to mobilize a number of potential individuals for recruitment for participation in the focus group discussions.

As the principal researcher was living in the community, she visited the individuals in their settings, asking them about their children, and used screening questions to determine the individual's eligibility for participation. The screening ensured that each participant had a biological child under five years old and is a permanent resident of the village. To avoid recruiting people of the same social network, different entry points were used. After it was established that the individuals met the study's eligibility criteria, the person was given detailed information about the study, and was asked whether she/he was willing to take part. For individuals who expressed interest and willingness to participate, appointments for discussion were made based on their availability. During data collection, there reached a time when further probing in the interviews and FGDs did not reveal new codes. At this stage, data saturation was reached and we decided to stop recruitment.

7.3.4 Data Collection

We conducted in-depth interviews to gain insight into caregivers' personal views and experiences of the capabilities and contexts underlying the growth of their individual children. The focus Group Discussions aimed to capture general opinions on parents' capabilities contributing to healthy growth in their under-five children. For interviews and focus-group discussions, topic guides with open-ended questions and probes that covered various topics, including perceptions of child growth, contextual factors underlying child growth, child feeding practices, and experiences with growth monitoring services, were developed using the CFCG and piloted. The issues related to parental capabilities, conversion factors, and agency relevant to healthy child growth were captured using questions on the parents' daily responsibilities in the family, perceived qualities of a good mother/father in relation to her/his child, mothers' and fathers' roles in promoting healthy growth, what parents can do to make their children grow well, what parents think they would need to make their children grow well, the environments that contribute to parents' ability and/or inability to provide good care for their children, and stories about moments when they wanted to take care of their children but could not. All focus group discussions and in-depth interviews were conducted in Swahili, audio-recorded using a digital recorder, and later transcribed *verbatim*. Most interviews were arranged in the participants' homes at times convenient to them. The focus group discussions were conducted in different venues, including school classrooms (after school hours), and the principal researcher's and participants' home compounds.

In order to gain insights into the socio-cultural and economic contexts in which parents/caregivers and their children live, the principal researcher set up a household and lived in the study community for the entire period of the fieldwork. While in the field, she took part in the village life and participated in daily activities. Passive participant observation was conducted during day-to-day activities such as visiting and chatting with neighbours at their homes, attending village meetings, churches and burial ceremonies. More active participant observation involved cooking with women,

participating in the intimate household level child care activities such as feeding and carrying the baby around, accompanying mothers to the child growth monitoring clinic, to the market for groceries, joining women to fetching water from the boreholes, accompanying them to pick greens from gardens near their house and to the farms at a few hours walking distance. Walking around between the houses/neighbourhoods allowed the researcher to observe the daily preparation of food, timing of feeding, whether people preferred or avoided certain types of food, eating arrangements, and groups of men and women busy in farms, et cetera. The researcher's house location, in particular, placed her in a setting where she could easily meet and observe villagers—particularly early in the morning, and in the evening—as they passed to and from their farms. Furthermore, living and working in the field while pregnant and later together with her newborn, narrowed the distance between the researcher and the women who participated in the research, something that motivated them to freely share their stories. Additionally, her stay in the field and the fact that most of the in-depth interviews were conducted in participants' homes enabled her to witness the poor condition that some of children and their parents were living in and thus contributed to her understanding of the construction of healthy child growth in this context. Throughout the fieldwork, the researcher wrote fieldnotes on day-to-day encounters, and kept a reflective diary.

7.3.5 Data Analysis

Data analysis started in the field, as the researchers documented the themes that emerged from day-to-day encounters. This enabled researchers to go deeper into the subsequent focus group discussions/interviews. As Strauss and Corbin [25] emphasize, in ethnography, data collection and analysis are not distinct phases, as an initial analysis of the information gathered in the early phases of fieldwork shapes the future course of the work in a reiterative process. To preserve linguistic authenticity, all transcripts were analyzed in Swahili. The analysis took place at two levels. In the first circle of coding, the inductive and deductive codes were developed. First, a series of inductive codes was developed based on the principles of Grounded Theory [25], whereby theoretical insights emerge from the data rather than being pre-specified. Inductive codes were determined through a close reading and re-reading of transcripts. Second, the deductive coding was performed based on theoretical components of the capability approach that informed the data collection topic guides and maternal capabilities could be identified. The inductive and deductive codes were discussed and refined by the researcher and the fourth author. In the next circle of coding, the codes were categorized into groups of themes—as described in Hennink, Hutter, and Bailey [26]—which reflected maternal capabilities for healthy child growth. All transcripts were imported to and coded using NVivo 11 software (QSR International Pty Ltd., Doncaster, Australia). Additional data from field notes were used to clarify and expand the perspectives of the caregivers in relation to maternal capabilities for healthy child growth.

7.3.6 Positionality

The researcher was a mother and was pregnant at the time of the first round of fieldwork. During the second round, she had two children, and the newborn was with her in the field. The researcher's role as a mother encouraged the women to trust her and to share their stories about how they navigate the challenges they face in ensuring the healthy growth of their children. Although the researcher and the research assistant were younger than some of the participants, the principal investigator being

a mother masked the disadvantage of appearing young to some of the participants, as it brought them into the peer group of adults who were able to empathize with the caregivers' stories.

7.3.7 Ethical Issues

The study was approved by the Research Ethics Committee at the Faculty of Spatial Sciences of the University of Groningen in Groningen, the Netherlands and the Tanzanian Ministry of Health, Community Development, Gender, Elderly and Children through the Medical Research Coordinating Committee (MRCC) in Dar es Salaam, Tanzania (NIMR/HQ/R.8a/Vol.IX/1974). Additionally, permission was granted by the regional, district, and village leaderships prior to the commencement of the research activities. Full information was provided to participants verbally and as a written copy in Swahili, and written/thumbprint consent was obtained.

Participants' confidentiality and anonymity were ensured by conducting the discussions/interviews in private locations, and removing all identifiers from the interview transcripts prior to data analysis. In the quotations in this paper, pseudonyms are used to protect the participants' identities.

7.4 Results

Three maternal capabilities emerged from the analysis of the caregivers' narratives on healthy child growth: (1) being able to feed their children, (2) being able to control and make decisions on farm products and income, and (3) being able to ensure access to medical care. We also discuss each of these capabilities by showing how they are influenced by contextual and/or individual factors and caregivers' agency, and how they shape the promotion of healthy child growth. Despite the presence of different types of participants in our sample, our analysis did not find any significant differences among them in perspectives regarding maternal capabilities for healthy child growth.

7.4.1 The Capability to Feed

In the study setting, the mother is depicted as the main caretaker (*mlezi*) of under-five children, and is thus considered responsible for the health and growth of her children. When describing the qualities of a good mother that helps a child grow well, participants mentioned "providing good care to children." From the participants' perspective, "good child care" mainly entailed breastfeeding a child, and cooking and feeding a child nutritious food at the right times. A number of conversion factors were noted that could enable or disable the mothers to achieve the ability to feed their children. We grouped these factors into two categories: (i) personal conversion factors and (ii) social conversion factors.

Personal Conversion Factors and the Mother's Capability to Feed

Paternal capabilities and behaviors: The analysis shows that a mother's capability to feed a child in utero and after birth interacts with those of the father, i.e., her partner. For instance, fathers "being able to earn," and "being able to ensure that mothers are healthy and nourished during pregnancy and lactation period" became endowments for mothers to provide care, thus promoting healthy child growth. The following

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quote illustrates how a father's capability to ensure good nutrition to a mother during pregnancy results in a "good"-sized newborn child.

When a mother is pregnant there are particular nutritious foods that she is supposed to use [eat] so that she promotes the health of the baby in her womb. You see, when a mother gives birth, you will find that the baby is in good health. When the baby is born in good health you will hear people say, 'Someone has given birth to a big baby, the baby is bigger than her mother.' The baby is big to the extent that when s/he is taken to be weighed you find that it has three or four kilos, you see! That means that a father took a good care of his wife when pregnant. (FGD-#03-Father)

Additionally, the partner's behavior could compromise a woman's resources or constrain her ability to feed her children. For example, engaging in alcoholism, polygamy, extra-marital sexual relationships, or pregnancy denial emerged as factors that could compromise a father in his role as parent and partner, and leave the mother with extra productive and reproductive responsibilities to compensate for his unavailability as a husband and caregiver. This, in turn, affected the mother's functioning, including her ability to adequately feed her children. Mothers reported that some men were misusing meager family resources, neglecting their children, and spending most of their time away from home. They added that if the father was neglecting his children or refusing to provide for the family, the mother could exercise agency by seeking support from local leaders, who often intervened and made the fathers provide economic support for his children's daily needs, particularly food and medical care. A number of mothers said they had reported their partner to local leaders to make them provide for the family.

I told him (partner) that the child has been found with UTI and malaria, and that the cost is 3000 shillings. He said, 'I do not have that 3000 shillings.' I then decided to report him to the sub-village leader. The leader helped me to make him provide that money. I then paid the lady (nurse). (IDI-#05-Mother)

Our observations and interviews indicate that women were overburdened by agricultural and domestic work, particularly during the rainy season. Mothers (primary caregivers) reported spending most of their day performing farm work—even during pregnancy—and then having to do domestic chores, including cooking for the family, when they returned home. Mothers' struggles to perform multiple roles left them exhausted, and affected their capability to provide good care, particularly adequate and timely feeding. Participants often ascribed poor child feeding to mothers having to occupy multiple roles.

When returning from the farm work, you are tired, but the household chores await you (majukumu yanakusubiri). You are supposed to fetch water, cook, feed children, wash children, wash clothes, and clean the house. Ideally, a child is supposed to eat three times a day, in the morning, in the afternoon, and in the evening. That is the mother's good care. But now, I return from farm work at 3 pm, it takes a lot of time to prepare mboga (leafy greens) and cook ugali. Eventually, my children eat late. In most cases, they end up eating twice a day. (IDI-#01-Mother)

At times, I overstay there [in the field] and return home late. I start cooking, but find that by the time I finish cooking, it is already late evening. They (children) end up eating just a single meal per day, as you cannot return early from the farm. (IDI-#02-Mother)

Moreover, spending long hours doing farm work was reported to contribute to early weaning among mothers, as in addition to making it hard for mothers to find time to breastfeed, it often caused mothers to skip lunch, which could, in turn, cause them to have insufficient breast milk or energy to breastfeed.

We usually go to farms early in the morning and return home at 2.00 p.m. At times, we even lack a chance to eat lunch. You only come to get ugali (stiff porridge) in the evening, around 4:00 p.m. That is when you return from the farm, you start cooking, and you finish around 6:00 p.m. That is the only meal you have for the day. While working in the farm, you are starving, but the baby breastfeeds on you the whole day. Thus, both you and the baby starve. When I breastfeed, it feels as if my soul leaves the body. So, you say, aah, it is better to stop breastfeeding her/him so that we can both eat ugali. Or you say, it is better to introduce food to him/her early so that s/he does not heavily breastfeed on you. (KII-#03-TBA)

To be able to feed their children while doing farm work, mothers often went to the fields with their babies, and took porridge and snacks with them. Although this improved mothers' capability to (breast) feed, it negatively compromised children's rest and good sleep, as, in most cases, the babies slept on the ground. The babies were also exposed to cold weather and rain during the wet season, and sun and dust during the dry season. Mothers often carried their babies on their backs when doing farm work, which was tiring for both the mother and the child.

Working with the babies in the farm is not pleasant at all. The farm environment is for work, not for resting. [...]. You find that a child cries so much, s/he becomes exhausted as most of the time s/he is tied on her/his mother's back. S/he must be tired. A child needs to relax, play a little bit, and sleep. But in the farms, s/he lacks that. (IDI-#03-Father)

Mothers pointed to the partner's support as one of the important contributors to their ability to feed their children while they were doing farm work. While a few mothers reported receiving support from their partner in carrying the baby so that they could cook for the family after returning from work, only one man admitted to helping his wife with domestic chores, including cooking and feeding under-five children. In the study community, it was noted that a father could help his wife by hiring a housemaid to do household chores and to take care of under-five children while she was doing farm work. However, the majority of the men lacked the financial means to hire help. The failure of many fathers to provide sufficient support to the mother in doing domestic work and providing direct care to under-five children was ascribed to patriarchy, which framed domestic works and taking care of children as "feminine responsibilities."

Most of men in our village are patriarchal (wana mfumo dume). They leave the burden [of child care] to mothers. You find that a mother has a lot of activities to do, and is still supposed to look after children. [...] With that situation, instead

of preparing food that has nutrients proper for healthy growth of her child, a mother decides to feed her child kiporo (dinner left-overs) so that s/he does not bother her with his/her hunger. That's why you find that a child becomes malnourished as s/he is not being provided with food suitable for her/his age. (IDI-#07-Father)

Additionally, maternal social networks were noted to be important conversion factors that promoted a mother's capability to provide good care, including feeding her children while away doing farm work. Mothers who were living in close proximity to important others like grandmothers and those who had good relationships with their neighbors, explained that they could leave their children at their grandmother's or their neighbor's while they were doing farm work. Some reported leaving their weaned babies at home under their older siblings' care, particularly during the weekends. Clarifying how having good relationships with neighbors and having friends around enhances mothers' ability to provide good care, including feeding their children, one participant during interview said:

I have best friends (maswahiba) with whom my child is comfortable. They like to stay with my child. One of the neighbors, who is with my son as we speak . . . I used to leave my child at her place, go to the farm and return late in the evening, say at 3 pm. I even do not leave behind any food for him (child), because what they will eat, my child also eats. She (friend) is so helpful. (IDI-#03-Mother)

Socio-Cultural Conversion Factors and Mother's Capability to Feed

A mother's ability to (breast)feed her infant was also shaped by socio-cultural conversion factors, including (i) the cultural schema that a new pregnancy during lactation period spoils a mother's breast milk [27]; (ii) the cultural schema that an infant's persistent crying at night indicates that the child is "born with hunger" (*mtoto amezaliwa na njaa*), and therefore cannot be satisfied by the mother's breast milk; (iii) the belief that a child's reduced interest in breastfeeding is caused by threats from *mdudu* (unseen evil spirit) residing in the mother's body. These beliefs were not held by the mothers alone, but were widespread in the community, including among the TBAs and CHWs who supported the mothers in the feeding process.

When a woman becomes pregnant prematurely, she can't continue to breastfeed while knowing that she has a baby in her womb. She has to stop breastfeeding, short of that, the baby will contract excessive diarrhea, which will weaken her and make her growth falter. [...] It is important to immediately stop breastfeeding completely when you notice that you are pregnant, even if the baby is three or five months old. (KII-#02-TBA)

People in our community have come to know over the years that when an infant cries much, it means that s/he is born with hunger. Thus, when a baby reaches three weeks, one month or two months, you find that s/he [caregiver] starts feeding her/him some 'uji' (porridge). (KII-#01-CHW)

Other children are denied breastfeeding by the evil spirits. When a mother has an evil spirit in her body, the child is being threatened by that evil spirit that you have. So, when a child is scared s/he avoids coming closer to you. [...] when that

happens, a mother decides to give the baby porridge or cow's milk. (FGD-#03-Mother)

7.4.2 Capability to Control and make Decisions on Farm Produce and Income

In the study setting, farming was a joint responsibility of men and women. However, many mothers reported that, because they lacked the capability to control and make decisions about the farm products and the earnings from selling those products—which was culturally prescribed as a male responsibility—their children's capabilities to be adequately fed and to get timely and proper treatment when they fell ill were limited. The analysis showed that women tended to be more concerned with keeping agricultural products for family needs, while men were market-oriented, and prioritized selling the harvests to get money to finance other forms of consumption, including buying assets and alcohol and having extra-marital relations. The findings revealed that men were even more likely to sideline women from managing farm products if women did not participate in farm work. It was reported that, in such cases, men habitually sold the farm crops without their partner's knowledge. In many households, men's tendencies to sell the family food reserves and to squander the income obtained led to food insecurity, financial constraints, and conflict between couples.

To enhance their capability to make decisions about farm income in order to better care for their children, mothers developed different coping strategies. Many decided to rent land from the village farm or from a private farm, and to cultivate this separate farm rather than the family farm, while others used their extra time to work for wages at other people's farms to satisfy their nutritional needs, as well as those of their children.

In our context, men control farm income. Thus, a woman decides to cultivate her own farm, and her man cultivates his own farm. When you harvest, you have your own income, and the man will have his own income (IDI-#04-Mother).

Mothers explained that to stop their husband from misappropriating the crops and sidelining them from controlling the agricultural produce, which was particularly likely to occur when they did not participate in farm work, they worked while pregnant almost up to their due date, and resumed working at least 40–60 days after birth.

You work in the farm from the first month of pregnancy till when you are almost due. In the ninth month if you feel that you are so tired, you may rest for one month, and then give birth. When you give birth, you continue working. [...] If you refuse to go to the farm, when he harvests, he will not involve you with the products. He could even decide to sell all the crops in the farm. You will just hear that your partner has sold the crops and has married another wife. Women are now conscious! She goes to work in the farm even when she has a little infant. This way, men hardly find a good reason to misappropriate the crops. (KII-#03-Traditional birth attendant)

Mothers reported that doing farm work even when pregnant, working on their own farm, and engaging in wage labor enhanced their capability to control farm products and earnings. This enabled them to make decisions about daily household purchases,

and to prioritize appropriate care for the optimal growth of their children. However, their engagement with extra farm work added to their heavy workload, which affected their capability to rest well, and further reduced their capability to provide good care to their children. Similarly, in some cases, mothers reported delaying seeking health care for their sick children because they were busy with extra farm work, which jeopardized the children's capability to receive timely medical care. Women who had complications during their pregnancy or childbirth faced more inequalities due to the loss of work and income.

7.4.3 Capability to Assure Access to and Utilization of Medical Care

In the study setting, mothers were depicted as the first people in the family to recognize that a child was sick or had special needs, and they were expected to ensure that their children got good and timely medical care. In most cases, when a mother realized that a child was ill, she immediately told her husband, not only because it was the norm to do so, but because she was dependent on her husband's economic support in seeking medical care for her ill child.

Usually, when a child is sick, a mother is the first person who will notice. She will then inform you (a father) that this little one is sick. Even if a child cannot speak, the mother has the capacity to recognize an ill condition in her child. By being close to a child, she can just tell if something is wrong in his/her (baby's) health" (FGD-FOU-#03)

Ensuring a child's access to and utilization of medical care emerged as an important capability for mothers related to promoting healthy child growth. The analysis indicated that a mother's capability to ensure that her children got proper medical care when ill was affected by the interactive interplay of multiple conversion factors, notably having a low income coupled with a lack of economic support from her partner when their children had health emergencies. Although many mothers confirmed that they had the capability to make decisions about care-seeking themselves, the process of executing their decisions was hindered by their lack of money to cover the costs related to medical care. A considerable number of mothers lamented that their partner tended to take their children's illnesses lightly, and provided little or delayed support when asked to pay for their children's medical care. The situation was worse for mothers who were in polygynous unions, as their husband was often not at home, or neglected their children when they were ill and needed treatment.

In their narratives about their children's access to medical care, mothers clarified that their partner rarely helped them take the children to routine child care clinics, as such roles were culturally perceived as feminine. In this context, if a father took his child for CGM, he would be ridiculed by community members, particularly fellow men, and perceived as being under his wife's control or charmed (*ametawaliwa na mke wake/amelishwa limbwata*).

Men in our context do not take children to the clinic. They feel shy (laughs). He will be laughed at by his colleagues. They will ask him, 'Why do you take the child to the clinic? Are you controlled by your wife? (umetawaliwa na mkeo?)'. That is what most of them (men) fear. (IDI-#01-Mother)

Many men lack confidence. People talk about being charmed by a wife. That's why one may ask himself, 'Should I take the child to the (CGM) clinic? No way, this is my wife's role.' So, he leaves it up to his wife. (IDI-#05-father)

Other conversion factors that challenged the mother's capability to ensure access to medical care included (1) the lack of a health facility in the village; (2) distance to the health facility; (3) impassable roads, particularly during the wet season; (4) the lack of public transport facilities; (5) shortages of drugs in most public health facilities. The study village, like most areas in Kilosa District, has a flat topography and is surrounded by rivers and farms. Thus, during heavy rains, a large part of the village floods. The poor road conditions in the wet season, coupled with the poor transport system, limited caregivers' ability to travel to nearby health facilities (approximately 3–5 km away), particularly when they had maternal and child-health-related emergencies. Additionally, despite the policy requirement in Tanzania that the under-five children receive free medical services from the government facilities, caregivers had to pay out-of-pocket to cover diagnostic visits, medicine, and hospital stays. The interplay of those conversion factors was reported to result in delays in seeking health care for children, self-medication of children's illnesses, particularly through the use of drugs leftover from previous treatments, and reliance on drugs from small shops in the village and traditional remedies. Confirming the mothers' concerns about the lack of health facilities, geographical factors, and poor roads, among other conversion factors that contributed to their inability to ensure access to medical care, which in turn affected child growth, one of the fathers during FGDs stated:

The lack of a dispensary (health facility) in this village is a big challenge towards our efforts to ensure that our children get better health care. We are greatly affected. Geographically, our area is troublesome during rainy season. We also lack good roads which could enable someone to rush someone to the nearby hospital in times of health emergencies. If we could have a dispensary in our village, it would be much better. [...] So, if a child falls sick, and if you are not careful, you may be surprised that the child dies at home. (IDI-#04-Father).

Although mothers' ability to ensure children's access to medical care seemed to be challenged by myriad conversion factors, including their dependency on the father as the head of the household, our analysis showed that within their narrow space of agency, mothers found ways to navigate medical care options for their ill children. Many mothers said they relied on community health workers (CHWs) when their children were ill and they lacked the means to pay for treatment. Services provided by the community health workers included, but were not limited to, counseling on child growth and health issues, referrals to health facilities, and, in some cases, prescribing drugs and medical treatments to both caregivers and their under-five children. Others said they consulted traditional birth attendants (for delivery and child health issues) and traditional healers and remedies (for the treatment of children's illnesses). Mothers were also entitled to receive loans to pay for medications for their children from health workers in nearby health facilities and the small privately owned drug shops (*maduka ya dawaa*) in the community. Beyond the formal and informal health service providers, neighbors, relatives, and local leaders played vital roles as direct and indirect advisors to mothers. Friends and neighbors also assisted by lending money or organizing transportation. Additionally, if a mother was being neglected by her partner, she was entitled to receive support from her parents and in-laws, or to have the local leaders' support in making the partner cover the child's medical costs.

You find that the child is ill and needs immediate treatment, but the father is not around or he tells you that he does not have money. What will you do? You must use your brain. If you have a friend, you go and ask her for a help or a loan so as you take your child to the hospital, with the agreement of refunding her later. (IDI-#04-Mother)

One day my son was feverish, I could not sleep. I was alone as his father does not sleep here. When the morning came, I informed his father about the child's condition. He told me to go to the drug shop for medication. I decided to take the child to the hospital for diagnosis. I only had 1000 shillings, while the diagnosis costs 3000 shillings. So I asked the nurse to help me (give medication on loan), she trusted me and told me to bring the remaining 2000 shillings later. When I returned home, I told him (partner) that the child has been diagnosed with UTI and malaria, and that the cost is 3000 shillings. He said, 'I do not have that 3000 shillings'. I then decided to report him to the sub-village leader. The leader helped me to make him provide that money. I then paid the lady (nurse). (IDI-#05-Mother)

7.5 Discussion

In this capability analysis of our ethnography on child growth, we found that healthy growth among under-five children was shaped by three specific maternal capabilities: 1. being able to feed their children; 2. being able to control and make decisions on farm produce and income; 3. being able to ensure access to medical care. We also show how these capabilities and conversion factors are interlinked.

7.5.1 Being Able to Feed

Mothers—the primary caregivers—were overburdened by farm and domestic work, which limited their capability to (breast) feed their children adequately. It is known that when mothers are overburdened by domestic and farm work, their children are more likely to be undernourished [16,18,28,29]. Overwork among mothers has been linked to inadequate breastfeeding and complementary feeding elsewhere as well, including in Bangladesh [30], Rwanda [31], Viet Nam [32], and Tanzania [15,16,18,33]. However, to our knowledge, mothers lacking the strength to breastfeed (indicating their exhaustion) and the time to eat as a result of farming activities have not been mentioned before. This was exemplified by the quote, “it feels as if my soul leaves the body” which illustrates the severity of the burden of breastfeeding while managing farming responsibilities. Based on the aforementioned findings, we argue that the prominent role of agriculture in rural Tanzania and women's engagement in agricultural activities partly explain: (1) why the rural poor in Tanzania have higher levels of stunting than urban residents; (2) why stunting occurs even in areas with relatively high food availability, including in the Morogoro region, which was the study setting. Our study findings call for interventions to address the multiple pressures on women to help them overcome the work and time demands that greatly reduce their capability to feed their children. Ahishikiye et al. [31] suggested reducing women's domestic and agricultural burdens, and encouraged them to engage more in home-based income-generating activities so they can allocate more time to childcare. This suggestion does not acknowledge the problem of men not sharing productive and reproductive responsibilities.

We would caution that interventions to address women's challenges related to farm work need further thinking to ensure that they do not hamper women's agency. We believe that since women have traditionally been engaged in the farming business for decades, detaching them from agricultural production may cause them to lose their agency, as they lack their own income. We argue along the same lines as Hodgson [34] that initiatives to address issues related to women's engagement with farm work should strive to achieve gender complementarity. In this context, parents should be encouraged to complement each other in fulfilling their roles and responsibilities in ways that promote the healthy growth of their children. Thus, fathers should become more involved in domestic affairs in order to complement mothers' efforts to provide care to the children. However, more operational research is needed to determine how fathers could be successfully engaged in domestic affairs, including providing direct care to under-five children. Additionally, our findings point to the need for nutritionists to promote and advocate exclusive breastfeeding while taking into account that mothers' capability to breastfeed is related to (a) mothers' productive roles and (b) fathers' productive and reproductive roles.

In addition to women's heavy workload, the early introduction of complementary feeding was shown to be influenced by cultural schemas, especially those framing sexual activity and the view of a new pregnancy during lactation period as harmful to the growth of the baby. Similar schemas have also been reported by previous ethnographic studies conducted in Tanzania [27,35,36]. Our findings point to the need for open discussions between health workers and mothers about cultural issues related to breastfeeding, and for health workers to be more respectful of cultural models. Both pre-service and in-service training for health service providers—including TBAs and CHWs—on cultural competence [37,38] could help bridge the gap between biomedical and local explanations of breastfeeding, and thus improve parent–health worker communication [39]. As suggested by Mchome et al. [27], health workers could also focus on addressing the existing misconceptions around breastfeeding, such as those related to sexuality and a new pregnancy during the lactation period in their health promotion activities.

Mothers navigated the different social support systems—social networks—that were available to them to provide what they found to be better care. Mothers were assisted in the ability to feed, for example, by grandmothers, older children, and neighbors in looking after and feeding their under-five children when they were away doing farm work. The role of social support in enhancing a mother's capability to feed her children has also reported in other studies conducted elsewhere [31,40–43]. While the importance of social networks in enhancing a mother's capability to feed her children while away from home is crucial, it must be emphasized that the extended social support cannot replace the father's role in promoting healthy child growth. Additionally, the practice of leaving weaned children in the care of an older sibling, as observed in this study, is worth noting, as it may limit the caregiver's attention to younger children, and expose them to poor care [16,18,33,44,45].

7.5.2 Being Able to Control and Make Decisions on Farm Produce and Income

Another factor that mediated mothers' capabilities related to child growth was the household power structure within which child care occurred. The patriarchal society and its associated cultural norms restricted women's control of farm produce and

decision-making about household purchases. Mothers reported that their ability to feed and ensure access to medical care for their children interacted with the fathers' ability to provide for the family as the head of the family and the breadwinner. As a result, the mothers could not buy appropriate food for their children or take their children to hospital without their husband's financial support—which was noted to be scarce due to men's behavior, including alcoholism, polygamy, and extra-marital sexual relationships. The relationship between women's access to and control over financial assets and growth outcomes for their children is also reported in studies elsewhere [15,46–48]. As Kariuki et al. [49] have observed, when women have more control over the family's financial resources, a larger proportion of the income is allocated to children's basic needs. The findings in this study point to the need to improve women's earnings and economic justice at the household level. However, we caution that changing patriarchal norms is not easy, and has taken several decades in Western societies. Thus, in this context, rather than economically empowering women only—which has shown to increase tensions among parents, and even to lead to different forms of violence against women [50]—we suggest that both men and women in the study setting should be economically empowered. Through this strategy, both men and women will be able to have control over their income, thereby strengthening each other's ability to achieve healthy child growth. Since our study findings confirm that parents' ability to ensure healthy child growth interact and are interdependent, the economic empowerment strategy suggested in this paper should have a gender training component in order to raise fathers' awareness that caring for children and providing for the family are shared responsibilities. Fathers should also be motivated to cease harmful behaviors that affect their wives and children.

7.5.3 Being Able to Ensure Access to Medical Care

Mothers mentioned poor paternal support in providing direct care to children, including taking children to routine CGM clinics, as it was constructed as a feminine role. Although we understand the importance of promoting the engagement of men in child care, including feeding, as recommended by [31,51,52], we argue that the interventions that promote men's engagement in maternal and child health care in areas similar to the study setting may not succeed unless they address cultural norms that deter men from providing direct care to under-five children, including attending child care clinics, and focusing on inequalities that are intertwined with gender relations. Additionally, neighbors, drug store attendants, community health workers, and professional health workers played vital roles in facilitating mothers' ability to ensure access to and utilization of medical care for their children. The caregivers' reported reliance on small drug shops and CHWs for accessing medical care for themselves and their children is alarming, as (i) the CHWs are not professional health care providers, and (ii) the drug shops in the community are operated by unqualified attendants who offer a variety of medications, mostly without prescription [24]. The practice of relying on these workers may fuel self-medication practices, which have many adverse effects [53]. To avoid harm that may result from the misuse of the CHWs' power, we recommend routine monitoring of the operation of CHWs, and occasional refresher trainings for CHWs that remind them of the need to adhere to their specific roles and their ethical obligations. The general community should also be informed of the roles of CHWs, including that they are not professional health care providers.

7.6 Conclusions

Through the use of CFCG framework, the findings show that healthy growth—a functioning at an early age—is a result of the interactive interplay of maternal capabilities, among others. The lived experiences of the mothers in the study area indicated that child growth outcomes are plural, and go beyond the indicators at the child level to include factors external to the child, such as the parents' (mothers') capabilities. Our findings are useful in rethinking child growth monitoring, as has also been suggested by [5]. Based on our study findings, we advocate for a CGM paradigm shift to ensure the healthy growth and development of under-five children. Specifically, we recommend that the practice of growth monitoring engages a multidimensional approach that goes beyond the determinants level and biometric measures, and considers the caregivers' ability to ensure healthy child growth. We would argue, in line with Chakraborty [20], that instead of defining and assessing child growth as an anthropometric outcome only, efforts should be made to understand child growth and to intervene in childhood malnutrition while taking into account the parents' capabilities.

Moreover, if these capabilities are declining, the focus should be on promoting the caregivers' awareness of what they value (i.e., their capabilities). For example, in the study village, the mothers' awareness of their ability to feed their children, to control their family's resources and to make decisions about their family's income, and to ensure access to medical care was bounded by unequal gender roles, their financial constraints and dependency on their husband, their agency, and gendered norms and structures. From the findings, addressing culturally bound practices that affect child health are key to healthy child growth. Efforts should focus on addressing the unequal division of labor by educating the community that domestic tasks are the responsibility of both men and women. Similarly, efforts are needed to reduce women's burdens in agricultural production, and to improve their access to resources and decision-making about family income. Based on the study's findings, we recommend policies that protect and advance women's rights by providing them with more opportunities so that they can choose what they value most—in this case, providing good care to their children.

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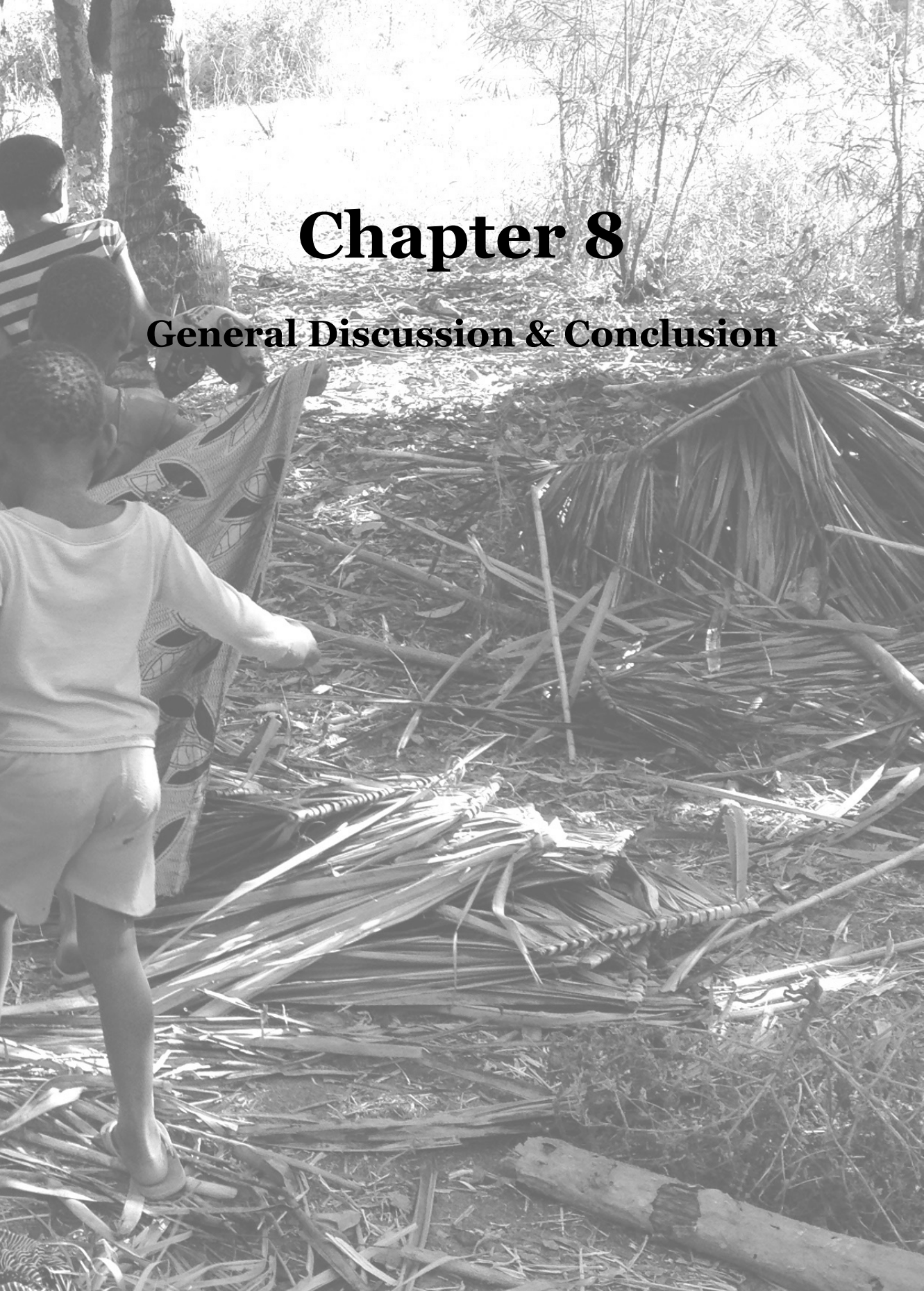
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Chapter 8

General Discussion & Conclusion



8.1 Introduction

The research presented in this thesis is part of a larger project on the “Normative indicators of child growth and nutrition— one size fits all?” This larger project aimed to develop a multi-dimensional framework for child growth that would be context-specific. Ethnographic approaches were suggested for the identification of such dimensions in specific contexts, including Tanzania and Bangladesh. The project used the capability approach and the list of capabilities for child well-being, as presented by Biggeri et al., (2011), as the basis of the development of a capability framework for child growth. Several conceptual papers have been developed as part of this project: the theoretical framework (Haisma, Yousefzadeh, & Boele Van Hensbroek, 2018), the Capability Framework for Child Growth (CFCG) (Yousefzadeh, Biggeri, Arciprete, & Haisma, 2019), and the CFCG in relation to combating the double burden of malnutrition (Haisma et al., 2019). Two PhD research projects, the one presented in this thesis, and another one conducted in the *haor* regions in Bangladesh (Chakraborty, Yousefzadeh, Darak, & Haisma, 2020), informed the further development of the CFCG by providing rich contextual information on how community members conceptualize healthy child growth.

The Capability Framework for Child Growth (CFCG) defines healthy growth as “the process of continuous physical, psychological and social change that builds a child’s capabilities to maximize life chances at the individual and societal level” (Haisma et al., 2018; Yousefzadeh et al., 2019). This approach is in contrast to the biomedical model of child growth (Launer & Habicht, 1989), in which standardized and directive nutritional advice (Gerein & Ross, 1991; Sachs, Dykes, & Carter, 2006) is conveyed to mothers, while disregarding their specific situations. In the biomedical model, child growth is defined as the changes in the child’s weight, height, and head circumference over a given period of time (UNICEF, 2013), and this definition has resulted in the development of interventions that focus primarily on improving the child’s nutritional status. The CFCG provides insights into the root causes of child malnutrition, which can be used to design interventions that maximize the real opportunities of parents to support healthy child growth. This thesis has contributed to our understanding of such root causes in Malangali village, Morogoro, Tanzania.

In this final chapter, I present a discussion of the main findings in the context of other existing scientific evidence, while also reflecting on the theoretical underpinnings of our study (see Section 8.2). Section 8.3 presents our methodological considerations in this study. Based on the key findings, Section 8.4 discusses the implications for policy, public health programs, and community-driven initiatives; and offers recommendations for policy-makers and public health programmers / health professionals aiming to promote public health, and particularly healthy child growth. The chapter concludes with suggestions for further research (Section 8.5).

Overall, the aim of this research was to gain an understanding of how the socio-cultural context informs parents’ framing of child growth in Tanzania. Specifically, the study explored the following research questions:

- How do community members conceptualize healthy child growth? What local markers do caregivers use to recognize the healthy growth of young children?
- What are the conceptualizations of and meanings community members attach to childhood height and short stature?

-How do the social context and cultural schemas shape community members' beliefs regarding the etiology of growth faltering and child care practices?

-What are maternal capabilities for the healthy child growth?

Data were collected through ethnographic fieldwork conducted in Malangali, a rural village in Kilosa District, Southeastern Tanzania, using several methods, including a household census, observations, focus group discussions (FGDs), in-depth interviews (IDIs), and key informant interviews. The aim of the study was to gain a better understanding of caregivers' perspectives on child growth in Kilosa District, Southeastern Tanzania. Both inductive and deductive approaches were used to analyze the data (see Chapter 2).

8.2 Theoretical reflections on the main findings

This ethnographic study was guided by concepts from cultural schema theory (D'Andrade, 1984) and from the capability approach (CA), which originated in the field of welfare economics (Sen, 1993). The CA is a broad framework for the assessment of individual well-being and social arrangements (Robeyns, 2006). Cultural schema (CS) theory is derived from the cognitive anthropological perspective on cultural meaning systems (D'Andrade, 1984), as has been further described in Chapter 1 (Introduction chapter). Although other research conducted in Tanzania (Howard & Millard, 1997; Mbekenga, Pembe, Darj, Christensson, & Olsson, 2013; Wandel & Holmboe-Ottesen, 1992) and elsewhere in Sub-Saharan Africa (Flax, 2015; Flax, Thakwalakwa, & Ashorn, 2016) has used ethnographic methods to examine child growth / nutrition, the theoretical framework employed in this study (CS and CA) is unique, and has provided an in-depth look at how the socio-cultural context interacts with individual capabilities to shape the observed reality of multi-dimensional child growth in the community. These insights have pushed the boundaries of the CGM paradigm, helping it to evolve from being a mono-dimensional approach to being a more comprehensive approach that is able to capture all of the factors that might contribute to healthy / poor growth.

Our use in this study of the CS theory alongside the CA enhanced our understanding of the multidimensionality of child growth, as it (1) facilitated the identification of the local markers of and beliefs around child growth, and (2) enabled the CA to investigate in more depth the socio-cultural conversion factors that underlie mothers' capabilities for healthy child growth. The use of the CA in conjunction with the CS theory in this study also allowed for a different operationalization of the cultural schemas. For instance, as well as showing that the cultural meaning systems informed caregivers' schemas or their framing of healthy / poor child growth, the CA demonstrated that these schemas acted as conversion factors that ultimately facilitated or constrained the mothers' capabilities to care for their children. This dynamic is exemplified by the prevalence of the concept of *kubemenda* (see Chapter 6) as a cultural explanation for poor child growth, which constrained the mothers' capabilities to breastfeed their babies. The combination of the CS theory and the CA in guiding this study helped us identify three important topics that are discussed in more detail in the following sections using the CS and CA concepts: 1. the multi-dimensionality of healthy child growth; 2. the socio-cultural context of healthy /poor child growth; and 3. issues of agency in relation to healthy child growth or maternal capabilities.

8.2.1 The relevance of a multi-dimensional approach to child growth

Through the use of the CA framework, the findings indicated that healthy growth is a multi-dimensional – and thus plural – concept. In this study, the plurality of healthy growth is expressed in two ways: first, it includes multiple markers that go beyond anthropometry (Chapter 4). Second, it includes factors external to the child, such as the capabilities of the mother, that inform how the child grows (Chapter 7).

i. Emic markers of child growth

Among the community members in the Malangali village, healthy child growth was conceptualized beyond the biomedical model (Chapter 4), and thus included multiple markers, most of which had implicit cultural roots. Among these markers were physical signs, such as “being *bonge*” (chubby), “having good *kilos*” (weight), and “growing in height;” but also “being free of illnesses” and “eating well.” Other markers of healthy child growth described by the study participants included age-appropriate motor development (“crawl, stand, walk on schedule”), cognitive development (good memory, comprehending parents’ instructions), emotional expressions (being cheerful, happy), and social skills (playful, interacting with other children). The findings indicated that the caregivers of under-five children trusted the locally accepted markers in tracking child growth, and were confident that based on these markers, they could tell if a child was growing well even before the child was weighed. These observations call into question the effectiveness of applying in Tanzania and elsewhere a one-size-fits-all approach that only focuses on the physical outcomes of growth to evaluating how well under-five children are growing and to intervening in poor child growth (Haisma et al., 2018). Furthermore, consistent with other studies conducted elsewhere in Africa (Roberfroid, Lefèvre, Hoérée, & Kolsteren, 2005; Tekle, Tariku, Alagaw, Zerihun, & Bekele, 2019), our study found that the caregivers’ local criteria for evaluating the healthy growth of their children led them to stop attending growth monitoring sessions, or to attend them less regularly (Chapter 4). These findings reveal the power of the broader systems of cultural meanings in informing caregivers’ perceptions about the growth of their children, which can, in turn, act as conversion factors that mediate the caregivers’ behavior and decisions in relation to health care practices, including growth monitoring.

In this study, the community’s cultural model and the biomedical construction of healthy child growth were observed to exist alongside each other: i.e., the meanings attached to biomedical concepts were culturally bound. For instance, whether a child had a poor or a good weight, or whether a child could walk on schedule, was ascribed to the parents’ adherence to postpartum sex taboos. The findings further showed that the meanings attached to fatness in a child expressed by the study participants were influenced by the cultural value that chubbiness connotes good health, beauty, and a higher level of parenting competence (Chapter 4). These findings are in line with those of other studies conducted in Southern Malawi, which showed that parents valued adiposity rather than stature in assessing child growth (Flax et al., 2016), as they perceived a large body size as healthy (Flax, Thakwalakwa, Phuka, & Jaacks, 2020). The emphasis on fatness in children, as observed in this study, is potentially advantageous in settings like Tanzania, where most of the neonatal deaths occur among children with low birth weight (Afnan-Holmes et al., 2015), and children having an above-average weight for their age during the weaning period serves as a buffer against the effects of frequent infectious diseases (Caulfield, de Onis, Blössner, & Black, 2004). However, given the increase in the burden of double malnutrition in Tanzania, the schema that a short child with a fat / heavy body has “normal shortness”

is problematic, as it can cause caregivers to fail to recognize the risk of double malnutrition (i.e., stunting and obesity), and thus to fail to seek help.

Although the caregivers' cultural model seemed to integrate biomedical concepts of healthy growth, their conceptualization of child height and markers of stunting diverged sharply from those of the biomedical model, as stunting was conceptualized beyond stature to indicate faltering growth in a very broad sense (Chapter 5). The cultural signs cited as indicators of stunting included physical markers, such as having "a mature face," "poor weight," "thinness," "visibility of muscles through the skin," "mature or immature skin for age," "wrinkled skin," "tight calf muscles" (*vigimbī*), "a swollen belly or cheeks," "unhealthy hair," "a weak body," and "low height" (*ufupī*); as well as impaired motor development (unsteady upper and lower limbs, inability to crawl, stand, walk on schedule), cognitive development (forgetful or struggles to understand the parents' instructions), emotional expressions (not cheerful, miserable), and social development (not playful); and a compromised immune system (frequently ill). Thus, in the context of our study, a short child was considered healthy if s/he had a baby face; was chubby, smart, cheerful, active, and playful; weighed enough; was not frequently sick; crawled, stood, and walked on time; and had good skin. These findings indicate the multi-dimensional conceptualization of stunting, which stems from the cultural multi-dimensionality of healthy child growth (as explained above), and which is contrary to the biomedical framing of stunting as having a short height for one's age. Our findings highlight that the conceptualization of stunting by caregivers within their socio-cultural context is broader than was previously known, and thus point to the importance of giving caregivers a voice in their local contexts, taking into account how caregivers give meaning to biomedical indicators such as stunting, and updating the available framework to ensure that it is more respectful of these local models.

ii. Maternal capabilities to support healthy child growth

In addition to being influenced by socio-cultural markers of healthy child growth, as indicated above, the multi-dimensionality of the concept of child growth is demonstrated by evidence indicating that it includes factors external to the child, such as maternal capabilities. Following the Capability Framework for Child Growth (CFCG), parental capabilities are considered conversion factors for healthy child growth. It is undeniable that food, as a resource for the capability to grow well, plays an instrumental role in what caregivers can be or do. However, in practice, the value of food in enhancing healthy growth may not be realized if maternal capabilities (including (breast) feeding practices) that are context-specific are not identified and addressed. In this study, it was, for example, shown that a mother's capability to (breast)feed was sometimes disabled by an interplay of personal conversion factors, such as paternal behavior, or the mother being overburdened by agricultural and domestic work; and social conversion factors, such as cultural schemas around breastfeeding (Chapter 7). The observation that mothers' capabilities to provide good care to their children may be constrained by an interplay of multiple contextual factors has also been reported in Bangladesh (Chakraborty et al., 2020). The growth monitoring charts and tools that are currently in use may not be able to detect these contextual dynamics that contribute to malnutrition, as they do not include maternal dimensions. Capturing contextual information that embeds child growth would facilitate the identification of the root causes of childhood malnutrition, and would thus enhance the development of interventions that are effective in addressing inequalities among children.

8.2.2 The role of the socio-cultural context in shaping caregivers' beliefs and practices around healthy / poor child growth

As we noted above, we used the cultural schema theory (D'Andrade, 1984) alongside the CA in this research. Cultural schemas can be considered as socio-cultural conversion factors in the CA framework. Our study found that the cultural meaning systems play a double role in the multi-dimensionality of child growth. Apart from producing culturally bound markers of healthy child growth, as indicated in the previous section, the framework produces schemas – i.e., perceptions, beliefs, attitudes, and norms regarding issues related to the growth of young children – which, in turn, operate as socio-cultural conversional factors that influence caregivers' behavior, practices, and responses to issues related to the growth of their young children. This has several implications for caregiver practices around healthy child growth.

One example of a cultural conversion factor of healthy child growth is the cultural norm of practicing prolonged postpartum sexual abstinence. Although the caregivers in the study setting indicated that they believed in a variety of causes of poor child growth – including illness, inadequate nutrition, and witchcraft – the parents' non-adherence to postpartum sexual abstinence norms was a dominant cultural explanation for poor growth and development in a child, including stunting. Thus, prolonged postpartum sexual abstinence was seen as a culturally acceptable strategy for promoting healthy growth, and for preventing poor growth in children (Chapters 5 & 6). Although the aim of the cultural norm of practicing postpartum sexual abstinence was to promote effective breastfeeding, it turned out to be a negative cultural conversion factor that interfered with women's intentions to breastfeed their children in line with the recommendations of UNICEF (2018) and WHO & UNICEF (2019), as it often led a mother to wean her infant abruptly if she resumed sexual intercourse or became pregnant again. This behavior was based on a shared cultural schema that bodily substances – particularly the father's sperm or semen and the mother's vaginal excretions, which are believed to enter the mother's breasts and to be sucked by the baby – the body heat and the sweat generated during sex, and the body heat of a pregnant woman are harmful to the baby's growth (Chapter 6). Consistent with other studies conducted elsewhere in Tanzania (Mabilia, 2000; Mbekenga et al., 2013), the traditional discourse on postpartum sex was found to violate the fundamental human rights of mothers and their poorly growing children, including their rights to receive respectful, dignified, and humane care while attending maternal and child health clinics (United Nations General Assembly, 1993), as it subjected them to public shaming by community members, including by health workers. As Sen (1993) stated, “being ashamed to appear in public” and “not being able to participate in the life of the community” represent absolute forms of deprivation equal to hunger. The study further showed that the traditional belief that poor child growth is caused by non-adherence to postpartum sexual abstinence motivated caregivers' responses and choices of curative services, with traditional healers being preferred to biomedical practitioners in handling episodes of poor growth in children.

A second example of a cultural conversion factor of healthy child growth concerns the belief that height is not a marker of growth, but is, rather, part of the natural order created by God. Shortness was thus described as a normal condition that a child is born with, and that parents should not worry about (Chapter 5). It has been reported that “stunting” as a marker of undernutrition goes unrecognized in communities in

which having a short stature is normative (de Onis & Branca, 2016; Dewey & Begum, 2011). This was not, however, the case in this study population. In the context of our study site, the term “normal” was influenced by the lack of awareness that short stature is largely the result of poor nutrition, and by folk beliefs that God and heredity – rather than nutrition – are the final arbiters of child stature. Thus, it was assumed that caregivers could not influence a child’s stature (Chapter 5). The caregivers’ shared schemas acted as a social conversion factor that led them to avoid questioning shortness in their children or to seek help, as they did not feel in control of their children’s stature. Thus, the caregivers lacked agency in promoting the linear growth of their children, as they believed that unlike weight, parents cannot influence the height of their children through adequate care. Our finding that heredity was seen as the main determinant of a child’s size is in line with the observations of other studies carried out elsewhere in Africa (Flax et al., 2016).

8.2.3 Mothers’ agency in dealing with conversion factors underlying their capabilities for health growth.

In this study, cultural schemas – including those on gender roles, and gendered patterns in child care – normalized behaviors that challenged the mothers’ functioning, including their capabilities to adequately feed their children, to ensure access to medical care, to have control over farm produce, and to make decisions about household purchases (chapter 7). However, the analysis showed that the mothers were agents, as within their narrow space of agency, they engaged in nutritional and non-nutritional strategies to navigate the hurdles that constrained their capabilities to child growth. For instance, to enhance their capability to feed their children, mothers often took their children with them when they went to the fields, and carried food for the children to eat while at the farm. The strategies the mothers used to enhance their capabilities to control their family’s resources and to make decisions regarding their family’s income included renting and cultivating their own farms, separate from their family’s farms; earning extra income by engaging in wage labor; and asking elderly and local leaders to intervene, particularly in cases in which the husband was neglecting the family, was misappropriating farm produce, or was side-lining his wife from controlling the agricultural produce. These findings indicate that, as structures, cultural schemas not only constrained individuals’ behaviors, but also enabled other forms of action (Giddens, 1984). For instance, while control of and decision-making about farm produce was culturally constructed as a man’s responsibility, this did not leave the women powerless. Rather, the women acted on this cultural reality by resisting this norm and seeking support from elders and local leaders, and by looking for additional sources of income to help them provide their children with adequate care.

However, the findings also showed that despite the mothers’ efforts to enhance their capabilities to feed their children, there was often a gap between their intentions and their actual practices, as inadequate feeding and premature weaning were common, largely because the mothers spent long hours doing farm work often, thus lacked sufficient strength to breastfeed or time to eat. This observation resonates with research on breastfeeding behavior by Van Woerkum (2014), who found that irrespective of people’s good intentions, they often fail to adopt the desired healthy behaviors (ibid) due to the effects of the systems and the structures of the environment in which they live (Shaw D, 2008). Additionally, balancing their desire to be financially independent in the context of declining capabilities proved to be a challenge for the mothers, as it added to their heavy workload, and thus limited the time they had to

take care of their children. These findings show that the patriarchal norms in the study context were the main factors that constrained the mothers' agency and capabilities (Chapter 7), and resulted in the mothers having poor living conditions. These conditions may, in turn, have contributed to the normalization of childhood diseases observed in this study (Chapters 4 & 5). This finding is in line with what Bourdieu & Wacquant (1992) referred to as "symbolic violence," whereby traditional arrangements of inequality become inscribed in oppressed people's ways of thinking and behaving, such that they no longer question injustices of the existing social order.

Thus, the capability approach revealed that: (1) child growth was conceptualized by the mothers as a plural concept, as it included indicators of child growth that went beyond anthropometry and were culturally bound; (2) conversion factors –including beliefs around child growth, such as that of *kubemenda* – either contributed to or constrained the women's real opportunities to take care of their children; (3) the mothers' agency was constrained by the patriarchal society; and (4) the prevailing cultural schemas (social conversion factors in CA terms), as well as the meanings attached to child growth outcomes (markers) and the etiology of poor growth, influenced the participants' interpretation of and attention to the growth of their children.

8.3 Methodological considerations

By engaging an ethnographic approach, we were able in this study to give voice to caregivers in the community (Haisma et al., 2018) in defining what child growth entails. This, in turn, enabled us to uncover additional dimensions of child growth that should be considered in growth monitoring practices. The data collection circle we used in this study – i.e., first conducting a household census, making observations, and holding FGDs; and then conducting in-depth interviews (IDI) and key informant interviews (KII) – improved the richness of the findings, as the information from the FGDs was used to sharpen the topic guides that were, in turn, used for the IDIs and KII during the second phase of the data collection. Additionally, the sequence of the methods we applied enabled inductive knowledge to emerge, and to inform subsequent interviews. For instance, during the FGDs, many of the participants referred to deviant sexual behavior during the breastfeeding period as a cause of the symptoms of poor child growth. However, given the lack of privacy in the FGD setting and the conservative cultural norms in the village, most of participants were reluctant to discuss sexual issues in public. Thus, conducting the IDIs after the FGDs allowed us to explore more deeply how breastfeeding and sexuality after birth were seen in relation to child growth, and enabled us to capture the participants' personal views about and experiences of poor growth being ascribed to the deviant sexual behavior of the parents. This inductive approach resulted in the formulation of the third research question (Chapter 6). Similarly, while discussing the capabilities for healthy child growth during the FGDs, the participants – and particularly the mothers – inductively pointed to the unequal household gender dynamics as conversion factors that (dis)empowered their capabilities to support healthy child growth. Thus, conducting the IDIs after the FGDs provided us with an opportunity to capture the mothers' personal stories about the circumstances that underlie their capabilities to support the healthy growth of their children, which we added to Chapter 7. These stories provided us with new knowledge about gender issues in relation to child growth in this particular context.

Furthermore, our decision to combine different data collection methods in this study enabled us to capture more unique perspectives on child growth and caregiving activities than would have been possible if only a single method had been applied. For instance, the participant observations and the household census provided the researchers with situational knowledge of what was happening in the community, and enabled them to gain insight into the environmental, social, cultural, and economic contexts in which the parents/caregivers and their children were living. In addition, the observations improved the researchers' knowledge of the actual behavior around child growth practices, which was useful in cross-checking the normative behavior reported through conversations. While the FGDs helped the researchers to collect a broad range of information on how child growth was conceptualized in the community, the IDIs allowed the researchers to capture the personal stories of the parents about the growth of their children. The IDIs and the KIIs also allowed the researchers to validate the information generated through the FGDs, and to address gaps identified in the data collected through the FGDs.

This study has some limitations. First, it was conducted in a rural part of the country, and the number of participants was small. Therefore, the findings may not be generalizable to all caregivers of under-five children in the entire community, or the wider national population. However, we believe that the study's findings are highly relevant to the wider Tanzanian context, as (1) the study participants included caregivers from different ethnic backgrounds; and (2) a large share of the country's population live in rural areas, where the prevalence of childhood malnutrition is especially high (MoHCDGEC, 2016). Second, the design of this study did not allow us to examine the cultural variability in the perspectives about child growth, as the FGDs included a mixture of participants with different ethnic backgrounds. The only differences that could be discerned were those between the two unique ethnic groups of the Bantu and the Masai (i.e., Nilotic), as the FGDs for the Masai were conducted separately. Third, the mothers reported that the professional health workers had the same cultural schemas regarding postpartum sexuality and breastfeeding as the caregivers, and that they applied these schemas in providing medical services in health care settings. However, as the study village did not have a health facility, we were not able to capture the professional health workers' own views. Their inclusion in the study might have generated different perspectives, and could have allowed us to cross-check the caregivers' reports about them.

8.4 Implications of the findings, recommendations, and future research directions

The findings presented in this research have revealed promising avenues for culturally embedded, capability-oriented strategies that could be instrumental in the current debate on the promotion of healthy growth and the prevention of child malnutrition in all its forms. Thus, these findings could point to new directions for policy and practice, which are critical for Tanzania to achieve its target of reducing the prevalence of child stunting from the current 34% to 28% by 2021; to meet the global nutrition target of a 40% reduction in the number of stunted children under age five by 2025 (World Health Organization, 2014); and to achieve Sustainable Development Goals 2 and 3 (zero hunger and ensuring healthy lives for all) by 2030 (United Nations, 2019). The following sections discuss the implications of our findings for policy, public health programs, and community initiatives.

8.4.1 Policy implications and recommendations

Policy-makers who are seeking to guide the practice of child growth monitoring would benefit from applying a multi-dimensional approach to understanding child growth, as it could enable them to develop comprehensive and effective interventions aimed at preventing and alleviating malnutrition in all its forms. Our findings accentuate the need for counselling messages to be aligned with the context, and, thus, to include multi-dimensional indicators; (1) i.e., markers that are culturally bound and (2) indicators at the parental / household level. The benefit of using a multi-dimensional tool to assess child growth in Tanzania is fourfold. First, it can enable researchers to identify the *root causes underlying poor child growth* in Tanzania, and could thus help to answer the paradoxical question of why the prevalence of childhood stunting is so high in a country with ample food. Second, it can be used by health workers, nutrition educators, and policy-makers to help them understand *mothers' capabilities and agency*, which may, in turn, enable them to design interventions that are appropriate to the mothers' individual situations. Third, integrating cultural constructs about child growth into a capability-oriented tool that aims to support the design of interventions can increase the likelihood of the *acceptance by the community* and the sustainability of the interventions. Thus, the adoption of such a tool could have a greater impact on the future growth of the community than we realize.

Furthermore, it is crucial that a comprehensive approach is used that takes into account the cultural meanings that caregivers assign to the growth of their children when formulating policies, strategies, and guidelines; and when developing and implementing interventions aimed at promoting IYCF and healthy child growth and development. Applying a multi-dimensional lens while also aligning health messages with the socio-cultural context is relevant to the implementation of policies in Tanzania that are designed to alleviate malnutrition in all its forms, such as the Tanzania IYCF guidelines, 2013, the Tanzania nutrition social and behavioral change communication strategy (July 2013-June 2018), and the Tanzania National Multisectoral Nutrition Action Plan (2016/2017-2020/2021). Thus, taking these meanings into account could increase the chances that a clear message is communicated to caregivers that will motivate them to take action to encourage the healthy growth of their children, which would, in turn, contribute to the reduction in the double burden of malnutrition.

Finally, the recognition of the caregivers' agency based on the CA is crucial in promoting healthy growth among under-five children. Adding the concept of agency to current international frameworks of child nutrition would help to make clear who is accountable for poor child growth. Among the contributors to poor child growth are a lack of agency due to cultural or societal norms, such as those in patriarchal societies. Moreover, in Tanzania, the adoption of a westernized lifestyle and the obesogenic environment are increasingly affecting child growth. Agency as a concept could be added to the framework presented in the Lancet Series in 2013 on fetal and child nutrition and development (Black et al., 2013); the UNICEF conceptual frameworks of child malnutrition (UNICEF, 1990); the recently updated framework on the determinants of maternal and child nutrition (UNICEF, 2020); and the Nurturing Care Framework for early childhood development developed as a collaborative project by the WHO, UNICEF, and the World Bank (Black et al., 2017). At the national level, the issue of agency can also be raised when reviewing the IYCF guidelines for Tanzania (2013) and the Tanzania Employment and Relations Act no 06 of 2004, which are not

consistently reflective of the realities of rural women, whose freedom to promote the healthy growth of their children is limited by unequal power relations. For example, rural women often lack control over farm produce and decision-making about household purchases, and experience an unequal division of labor.

8.4.2 Implications and recommendations for public health programs

The implications of this research for public health programs are mainly in relation to the measurement of height, agency in breastfeeding practices, and overweight and obesity. Height, which is an aspect of growth, is an important element of well-being that should be included in assessments of healthy child growth. Given the prevalence of childhood stunting in Tanzania, and based on our findings, we recommend that public health programs such as growth monitoring and promotion practices include measurements of height and use height-for-age charts to measure child growth. This would increase the chances that children who are at risk of stunting would be identified in a timely manner, and raise awareness among parents and health workers of stunting as a public health issue. Thus, ultimately, using such charts would help Tanzania achieve its national agenda of reducing the prevalence of child stunting from the current 34% to 28% by 2021 (United Republic of Tanzania, 2016), and to achieve the target of the Global Nutrition Agenda of a 40% reduction in the number of stunted children under five by 2025. However, in the implementation of this measure, efforts should be undertaken to ensure that the equipment for measuring height/length are available at health facilities, and that health workers are trained in height assessment.

Moreover, including height measurements in the growth monitoring session alone will not be enough to create awareness of the importance of height in the community. Aligning cultural schemas on child stature with health messages is crucial to addressing childhood undernutrition, and particularly stunting. For example, the public health professionals (PHPs) in the study context may be more effective in improving the linear growth of children by building on the beneficial cultural schemas held by caregivers. This may, for example, include teaching caregivers how to deal with the day-to-day problems of childrearing, including approaches for dealing with their child's lack of appetite, and creating and adhering to mealtime schedules. In addition, the PHPs can recommend approaches to prevent children from contracting infections, and emphasize the importance of obtaining an early diagnosis and biomedical treatment before a child's illness becomes severe. Finally, the PHPs may want to consider using the specific local term "*ufupi*" (short stature) instead of "*kudumaa*" (stunting) when referring to stunting in the study context to ensure that a clear message is sent to caregivers.

The lessons on aligning cultural schemas with health messages presented above for undernutrition are also relevant to the prevention of overweight and obesity. Whether parents encourage their child to adopt healthy behaviors, such as healthy eating, depends on the parents' cultural norms and perceptions related to the child's body size. In other words, if the parents do not accurately perceive their child's overweight or obese status and its potential health risk, they may be less inclined to encourage healthy nutritional choices. This insight is relevant to the health programs and initiatives in Tanzania aimed at preventing and reducing maternal overweight and obesity, such as the National Multi-Sectoral Nutrition Action Plan (NMNAP 2016–2021), which is a dual action plan designed to address both undernutrition (acute malnutrition and stunting) and the emerging double burden of malnutrition (United Republic of Tanzania, 2016). Culturally aligned communications about healthy and

unhealthy body sizes are needed, as are dual messages emphasizing the importance of eating healthy foods and avoiding foods that contribute to overweight and obesity among mothers and children.

Issues of agency are also relevant for public health programmers. Efforts to empower mothers to develop their sense of agency – and, thus, to gain control of the conversion factors that disable their capabilities to achieve healthy growth – are crucial, and must co-exist with measures aimed at addressing the environmental and socio-cultural constraints they face, including unequal gender relations. This implies that the focus of nutrition promotion programs should extend beyond encouraging mothers to use food-related interventions. Instead, these programs should adopt a more comprehensive approach that empowers mothers to identify opportunities to make choices that will enable them to achieve what they value most – in this case, providing high-quality care to their children. Such a focus would enlarge the pool of options available to mothers in dealing with their daily demands, including IYCF-related challenges. Additionally, there is a need for nutritionists to promote and advocate exclusive breastfeeding, while taking into account that (breast) feeding is socio-culturally embedded, and is not an individual issue that the mother is responsible for solving. Thus, public health professionals need to identify how wider issues at the societal level can be addressed to enable effective (breast) feeding. For example, in the study context, the existing support systems, including gender platforms and local leadership structures, could be utilized in addressing unequal gender relations that disempower mothers from realizing their capabilities to support healthy child growth.

8.4.3 Implications for community-based initiatives

Involving the community members in health promotion is one of the essential strategies for improving the health and well-being of the general community, and is a prerequisite for implementing effective primary health care initiatives. However, in order to motivate community members to actively participate in disease prevention and control, community-based programs need to be based on carefully planned advocacy strategies. The findings of this study can inform such advocacy programs in organizing community initiatives to promote healthy child growth and to prevent childhood malnutrition. For example, the cultural knowledge that “eating well” is a marker of healthy child growth could inform advocacy activities for the promotion of healthy eating and responsive child feeding in the community. The finding that a “child’s resistance to illness” connotes healthy growth could be used to inform advocacy strategies for the promotion of approaches aimed at preventing children from contracting infections, and at encouraging parents to seek early diagnosis and biomedical treatment if a child becomes ill. Community health workers and traditional healers could be instrumental in implementing such initiatives.

Improving the broader community’s awareness of the symptoms and manifestations of different forms of childhood malnutrition, including stunting, is crucial in motivating the caregivers’ decisions to seek care and treatment for poor growth and illness in children. The current advocacy efforts in Tanzania to engage traditional healers in implementing health-related interventions could be strengthened to incorporate the provision of nutrition-sensitive education to caregivers of under-five children. In this context, public health programs could benefit from engaging the traditional healers by raising their awareness of the signs and symptoms of poor growth, and seeking their collaboration in challenging the traditional norms, and in referring caregivers to formal health care facilities if their child is growing poorly. Such

approaches could promote the early diagnosis and the treatment of the symptoms of children suffering from poor growth, and decrease the likelihood that harmful traditional practices will be employed in the community.

At the level of socio-cultural conversion factors, recognizing and addressing people's existing beliefs about early resumption of sexual intercourse and a new pregnancy during the lactation period is crucial in designing culturally sensitive interventions aimed at promoting effective breastfeeding in the community. Programs and initiatives supporting effective IYCF in Tanzania should conduct broad awareness campaigns to inform the caregivers that poor child growth is not an outcome of the parents resuming sexual relations during the postpartum period, but is the result of poor child care practices and persistent illnesses in the child. Such campaigns could help end the practice of subjecting breastfeeding mothers and their children to unjust treatment due to postpartum sex taboos, and enable couples to make decisions about postpartum sexuality jointly.

As well as nutrition indicators, it is important to consider the mothers' agency and capabilities to promote healthy child growth as criteria for measuring the development of a village or community. Additionally, the finding that parents' capabilities to ensure healthy child growth interact and are interdependent points to the need for community initiatives that promote gender complementarity between parents. Interventions that raise the awareness of the community – and particularly of fathers – that caring for children is a shared responsibility are, therefore, vital. Health authorities would benefit from utilizing community networks – particularly those of older women, traditional birth attendants, local leaders, traditional healers, and community health workers – in disseminating these messages given the positive role they can play in promoting health behavior, especially when they are equipped with proper knowledge.

8.4.4 Conclusion

This ethnographic study has provided important insights into the conceptualization of child growth in the context of rural Tanzania, and thus contributes to the discussion on what constitutes optimal or poor growth around the globe. Such information is important for policy-makers, public health programmers, and stakeholders concerned with promoting healthy growth among under-five children. Specifically, the study has shed a light on (1) the cultural framing and practices around child growth, and (2) the contexts that (dis)empower mothers to promote the healthy growth of their under-five children in their daily lives. The cultural schemas theory and the capability approach have been instrumental in identifying and analyzing those insights. Our key findings show that healthy child growth is perceived in the community as a multi-dimensional phenomenon, as it not only includes multiple markers that are culturally bound, but is informed by the practical opportunities that mothers have in converting available resources – including food – into healthy growth in their young children. This observation points to the need for a paradigm shift in the way child growth is currently monitored, which is in line with (Bégin et al., 2020), who suggested that there is a need to rethink growth monitoring and promotion practices. The results of this thesis revealed that in their everyday lives, the mothers experienced interplay of factors that both prevented and facilitated their engagement in inappropriate child care practices, ranging from the personal to the socio-cultural levels. Despite these challenges, most of the mothers in our study did not remain passive, they were able to exercise their agency in overcoming the hurdles they faced to achieve the healthy growth of their

children. The findings showed that having a strong sense of agency was an important factor in the mothers' capacity to develop diverse coping strategies to ensure the healthy growth of their children, including strategies that went beyond nutrition behaviors. The mothers' interactions with significant others within their social context proved to be vital in enhancing their capabilities to support healthy child growth. Based on the main findings of our study, we can conclude that the reality of child growth is complex, and that an evaluation of how children grow should reflect that complexity, and include contextual information, as well as anthropometric assessments. These insights have important implications for policy and practice, and could inform the development of public health interventions that take the socio-cultural context into account.

8.5 Implications for future research directions

Our understanding of the socio-cultural dimensions and contexts of child growth, guided by the cultural schemas theory (D'Andrade, 1984) and capability approach (Sen, 1976), raises some concerns that could guide future research directions. We therefore make the following recommendations:

- The paradigm shift in monitoring child growth needs to be supported by *an operationalizable multi-dimensional tool* that provides evidence that the model performs better than previous models. The development of the multi-dimensional tool for growth monitoring depends on data availability, which points to the need for rigorous empirical research that captures information on capabilities at the parental / household level, and the context-specific constraints and facilitators of healthy child growth. Sen (1993) has stated that it is the individual who must specify which capabilities are most "valuable." Thus, to understand the barriers that constrain mothers from developing their capabilities to support healthy child growth, it is necessary that mothers of under-five children are involved as early as possible in the process of designing the multi-dimensional tools. This capability-grounded research approach could provide an important knowledge base that would help the designers of the growth monitoring program to develop a comprehensive tool for monitoring and intervening in child growth in the local context. However, to successfully apply the multi-dimensional approach to the study of child growth, a thorough reorientation of the researchers examining child growth would be needed, such as through use of the multi-dimensional framework of growth developed by (Haisma et al., 2018; Yousefzadeh et al., 2019).
- There is a need for in-depth contextual knowledge on different aspects of healthy / poor child growth from different settings. This information would enable health programmers to integrate local cultural constructs around healthy / poor growth into a capability-oriented tool for monitoring child growth.
- Furthermore, there is a need for effective and well-designed *implementation research* that tests the proposed multi-dimensional tools before scaling them up for the development of child growth monitoring practices and interventions. To establish a strong base of knowledge about their efficacy and effectiveness, the tools need to be pre-tested in different contexts.

- The findings confirm that traditional rather than biomedical care is often sought to remedy growth problems in children. There is a need to examine *traditional healers' (THs) knowledge of child growth*, and their experience with the *treatment of growth issues* in children. This knowledge could help researchers identify the knowledge gaps regarding the diagnosis and treatment of poor growth among the THs, contribute to the development of specific interventions focused on dispelling the myths, and identify ways to engage the THs in promoting healthy child growth.
- Given the emerging double burden of malnutrition in Tanzania, and the cultural value of adiposity in children we observed in this study, more research is needed in the country to develop *behavior change communication strategies* aimed at creating community awareness of a *healthy size*.
- In this study, some health workers were described as encouraging prolonged postpartum sexual abstinence, and as having negative attitudes toward mothers with malnourished breastfeeding babies. Assessing medical professionals' *perceptions of parents' sexuality during the postpartum period in relation to child growth* is, therefore, vital. Obtaining this information could help researchers identify gaps in knowledge about postpartum care among the health workers.

8.6 References

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Appendices

Appendix 1 Nutritional status of under-five children in the study village

Appendix 2 Focus group discussion guide – Mothers

Appendix 3 Focus group discussion guide – Fathers

Appendix 4 Focus group discussion guide – Older women

Appendix 5 In-depth interview guide – Mothers

Appendix 6 In-depth Interview guide – Fathers

Appendix 7 Key-informant interview guide

Appendix 8 Participant information sheet & consent form

Appendix 9 Code-book

Appendices

Appendix 1: Nutritional status of under-five children in the study village

WHO Child Growth Standards (2006)						
Age (months)	Height -for-age Z-score					
	n	<-2SD (%)	<-3SD (%)	Median	25 th - 75 th percentile	
(0-60)	334	35.0	13.8	-1.6	-2.4, -0.7	
(0-5)	32	37.5	15.6	-1.2	-2.7, -0.3	
(6-11)	38	18.4	5.3	-1.1	-1.8, 0.2	
(12-23)	72	54.2	27.8	-2.2	-3.1, -1.4	
(24-35)	59	35.6	11.9	-1.6	-2.4, -0.9	
(36-47)	83	31.3	9.6	-1.5	-2.3, -0.7	
(48-60)	50	24.0	8	-1.5	-2.0, - 0.7	

	n	%<-2SD	%<-3SD	Mean Z-score	SD
Girls	174	29.3	8.6	-1.3	1.5
Boys	160	41.3	19.4	-1.7	1.5

Appendix 2 Focus group discussion guide – Mothers

I would like to thank you all for coming today. My name is and my colleague is (mention the name). As earlier informed, we will conduct focus group discussion with various people in this community as part of activities in my PhD study on issues related to growth of young children and monitoring of child growth. We believe that through talking to you about your views and opinions on growth of children will help the researcher to learn a number of issues on how growth is understood in this community. Let me inform you the modality of our group discussion today. As explained earlier, your participation to this study is voluntary so you are free to decide whether to participate or not. We however value your views and hope that you will participate. During the discussion, please be free to express your views as there is no right or wrong question. It is highly insisted that everyone respects freedom of expression of other participants. It is also very important that only one person talks at a time so that all information shared during this discussion is well recorded.

During the discussion, my colleague (name) will take notes and support me in asking questions whenever necessary. I would like request for your permission to use a small recording machine to record the conversation during the discussion. Therefore, we request that you speak aloud so that what you say is recorded clearly. In order to avoid interruptions to the recording we would like to request that you put your mobile phones in silent mode or switch off during the discussion. Our discussion will last about an hour or so. At the end of this discussion, we will provide you with a bottle of a soft drink. Are there any questions before we start?

A: Participants' background information

	Age	Sex	Tribe	Religion	Education level	Occupation	Marital status	Number of children	Age of youngest
1									
2									
3									
4									
5									
6									
7									
8									

B: Introduction Questions

Let us start by a brief introduction. Please introduce yourself and tell us who you are and type of work you do.

- (1) Can you describe the main income generating activities for women in this village? How about those of men?
- (2) Please tell us about types of foodstuffs that are available in this village? How do you get these foods?



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- (3) Can you describe the main type of food that people in your village like to it?
- (4) When people talk about 'a young child' in your community, what are they referring to? (If not mentioned, probe on other aspects than age).
- (5) In this community, who is considered to be a good mother to her young children? (Probe: What do people in this community see as the role of a mother for a child to grow well?)
- (6) Kindly tell me about child feeding practices in your community. (Probe on the following:
 - Timing of introduction of breast feeding
 - Timing of introducing complementary feeding (type of complementary food). Reasons for introducing complementary food before six months)
 - When do mothers wean their children? (Weaning food, Reasons for weaning a child before reaching two years of age)
 - Type of food that is commonly fed to young children in her family (ask the participants to specify foods for various categories of under-fives)
 - How many times children are fed in a day, quantity, (ask this for various categories of under-five?)
 - Eating habits e.g., whether children and adults eat together in one bowl etc.
 - Preparation methods and storage of foods

C: Community views and opinions on 'ideal' child growth

- (7) When a child is born parents expect to see their child grows well. In your community how is a child expected to grow from when it was born to age 5? If not mentioned, probe this with reference to sex of a child.
- (8) How can someone know that a child is growing well? (Probe on a range of criteria used in assessing healthy growth). Probe on healthy growth at birth, at age 1, 2, and 5-year-old).
- (9) Children are routinely taken to health facilities for growth monitoring. Does this happen in your village? Can you explain what things are checked for by health workers when assessing growth of children? What does it mean to you?
- (10) For many years now in child care programs growth of young children has been assessed by measuring their weight for age. What do you think about this? What other issues would you suggest to be considered in assessing growth of young children? (For each response, ask why?)
- (11) What do people in your community think about height of a child? Does it have any association with child's health / growth? (Probe on: Interpretations of short stature in children and determinants of height of a child; probe on difference between 'normal short stature and 'kudumaa' i.e., stunting).
- (12) Some of the children appear to be too fat than others. What is your opinion on a growth of a child who is fat?
- (13) Some of the children have low weight compared others of the same age. What are your opinions on a child who has low weight than others of the same age (probe what determines the weight of a child).
- (14) In this research we realized that there are practices that are conducted to facilitate healthy growth of a child since when it is born. Please tell me what are practices that parents in this community do to promote growth of their children (Ask the participants to narrate the practices from when a child is born up to age 5).

D: Community Perceptions on growth faltering

- (15) In your community, how can a poorly growing child be described?
- (16) How can someone recognize that there is a problem in the growth of a child? (Probe on criteria used in identifying poor growth in children).
- (17) Majority of under-five children in the country are reported to suffer from growth problems. In your experience, what might be the factors that contribute to poor growth of young children in your community (Probe on all perceived causes of poor growth including poor income, kubemenda, single motherhood, mother's lack of time, infections, beliefs, food issues, environmental & socio-cultural limitations, etc.)
- (18) Mothers are key caregivers of under-five children. In this research we realized that some of caregivers face some challenges that hinder their ability to provide good care to their children. In your experience, what might be possible factors that challenge the ability of mothers in your village to provide good care to their young children? (Probe on poor income, single motherhood, mother's lack of time, infections, beliefs, food issues, environmental & socio-cultural limitations, etc)
- (19) What do parents / caregivers in your community usually do when they think that there is a problem in growth of their children? (Probe: for different actions that caregivers take and reasons for that e.g., go to health facilities, consulting traditional healers, use traditional herbs, -what motivates their decisions?).
 - What are specific health / growth issues in children that necessitate the decisions to consult traditional healer or use of traditional medicine?
- (20) What are traditional preventive measures that people in your community take against growth problems in their children? (Probe from when a child is born up to age five (For each practice probe for the reasons).
- (21) What do you think should be done to make sure that children grow well?
- (22) We are now reaching the end of our discussion. Are there any other comments about children's growth that you want to make before we conclude?

Thank you for your time and participation to this study.



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Appendix 3 Focus group discussion guide – Fathers

I would like to thank you all for coming today. My name is ... and my colleague is (mention the name). As earlier informed, we will conduct focus group discussion with various people in this community as part of activities in my PhD study on issues related to growth of young children and monitoring of child growth. We believe that through talking to you about your views and opinions on growth of children will help the researcher to learn a number of issues on how growth is understood in this community. Let me inform you the modality of our group discussion today. As explained earlier, your participation to this study is voluntary so you are free to decide whether to participate or not. We however value your views and hope that you will participate. During the discussion, please be free to express your views as there is no right or wrong question. It is highly insisted that everyone respects freedom of expression of other participants. It is also very important that only one person talks at a time so that all information shared during this discussion is well recorded.

During the discussion, my colleague (name) will take notes and support me in asking questions whenever necessary. I would like request for your permission to use a small recording machine to record the conversation during the discussion. Therefore, we request that you speak aloud so that what you say is recorded clearly. In order to avoid interruptions to the recording we would like to request that you put your mobile phones in silent mode or switch off during the discussion. Our discussion will last about an hour or so. At the end of this discussion, we will provide you with a bottle of a soft drink. Are there any questions before we start?

A: Participants' background information

	Age	Sex	Tribe	Religion	Education level	Occupation	Marital status	Number of children	Age of youngest
1									
2									
3									
4									
5									
6									
7									
8									

B: Introduction Questions

Let us start by a brief introduction. Please introduce yourself and tell us who you are and type of work you do.

1. Can you describe the main income generating activities for men in this village? How about those of women?
2. Please tell us about types of foodstuffs that are available in this village? How do you get these foods?
3. Can you describe the main type of food that people in your village like to eat?
4. In this community, who is considered to be a good father to his young children? (Probe: What do people in this community see as the role of a father for a child to grow well?)

5. When people talk about 'a young child' in your community, what are they referring to? (If not mentioned, probe on other aspects than age).

C: Community views and opinions on 'ideal' child growth

6. When a child is born parents expect to see their child grows well. In your community how is a child expected to grow from when it was born to age 5? If not mentioned, probe this with reference to sex of a child.
7. How can someone know that a child is growing well? (Probe on a range of criteria used in assessing healthy growth). Probe on healthy growth at birth, at age 1, 2, and 5 year old).
8. Children are routinely taken to health facilities for growth monitoring. Does this happen in your village? Can you explain what things are checked for by health workers when assessing growth of children? What does it mean to you?
9. For many years now in child care programs growth of young children has been assessed by measuring their weight for age. What do you think about this? What other issues would you suggest to be considered in assessing growth of young children? (For each response, ask why?)
10. What do people in your community think about height of a child? Does it have any association with child's health / growth? (Probe on: Interpretations of short stature in children and determinants of height of a child; probe on difference between 'normal short stature and 'kudumaa' i.e., stunting).
11. Some of the children appear to be too fat than others. What is your opinion on a growth of a child who is fat?
12. Some of the children have low weight compared others of the same age. What are your opinions on a child who has low weight than others of the same age (probe what determines the weight of a child).
13. In this research we realized that there are practices that are conducted to facilitate healthy growth of a child since when it is born. Please tell me what are practices that parents in this community do to promote growth of their children (Ask the participants to narrate the practices from when a child is born up to age 5).

D: Community Perceptions on growth faltering

14. In your community, how can a poorly growing child be described?
15. How can someone recognize that there is a problem in the growth of a child? (Probe on criteria used in identifying poor growth in children).
16. Majority of under-five children in the country are reported to suffer from growth problems. In your experience, what might be the factors that contribute to poor growth of young children in your community (Probe on all perceived causes of poor growth including infections, beliefs, food issues, environmental & socio-cultural limitations, etc.)
17. Mothers are key caregivers of under-five children. In this research we realized that some of caregivers face some challenges that hinder their ability to provide good care to their children. In your experience, what might be possible factors that challenge the ability of mothers in your village to provide good care to their young children?
18. What do parents / caregivers in your community usually do when they think that there is a problem in growth of their children? (Probe: for different actions that caregivers take and reasons for that e.g., go to health facilities, consulting traditional healers, use traditional herbs, -what motivates their decisions?).

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19. What are specific health / growth issues in children that necessitate the decisions to consult traditional healer or use of traditional medicine?
20. What are traditional preventive measures that people in your community take against growth problems in their children? (Probe from when a child is born up to age five (For each practice probe for the reasons).
21. What do you think should be done to make sure that children grow well?

We are now reaching the end of our discussion. Are there any other comments about children's growth that you want to make before we conclude?

Thank you for your time and participation to this study.

Appendix 4 Focus group discussion guide – Older women

I would like to thank you all for coming today. My name is ... and my colleague is (mention the name). As earlier informed, we will conduct focus group discussion with various people in this community as part of activities in my PhD study on issues related to growth of young children and monitoring of child growth. We believe that through talking to you about your views and opinions on growth of children will help the researcher to learn a number of issues on how growth is understood in this community. Let me inform you the modality of our group discussion today. As explained earlier, your participation to this study is voluntary so you are free to decide whether to participate or not. We however value your views and hope that you will participate. During the discussion, please be free to express your views as there is no right or wrong question. It is highly insisted that everyone respects freedom of expression of other participants. It is also very important that only one person talks at a time so that all information shared during this discussion is well recorded. During the discussion, my colleague (name) will take notes and support me in asking questions whenever necessary. I would like request for your permission to use a small recording machine to record the conversation during the discussion. Therefore, we request that you speak aloud so that what you say is recorded clearly. In order to avoid interruptions to the recording we would like to request that you put your mobile phones in silent mode or switch off during the discussion. Our discussion will last about an hour or so. At the end of this discussion, we will provide you with a bottle of a soft drink. Are there any questions before we start?

A: Participants' background information

	Age	Sex	Tribe	Religion	Education level	Occupation	Marital status	Number of children	Age of youngest
1									
2									
3									
4									
5									
6									
7									
8									

B: Introduction Questions

Let us start by a brief introduction. Please introduce yourself and tell us who you are and type of work you do.

- (1) Can you describe the main income generating activities for women in this village? How about those of men?
- (2) Please tell us about types of foodstuffs that are available in this village? How do you get these foods?
- (3) Can you describe the main type of food that people in your village like to eat?



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- (4) When people talk about 'a young child' in your community, what are they referring to? (If not mentioned, probe on other aspects than age).
- (5) In this community, who is considered to be a good mother to her young children?
- (6) What do people in this community see as the roles of a grandmother for a child to grow well?)

C: Community views and opinions on 'ideal' child growth

- (7) When a child is born parents expect to see their child grows well. In your community how is a child expected to grow from when it was born to age 5? If not mentioned, probe this with reference to sex of a child (Ask about the past and now)
- (8) How can someone know that a child is growing well? (Probe on a range of criteria used in assessing healthy growth). Probe on healthy growth at birth, at age 1, 2, and 5-year-old). (In the past and now)
- (9) Children are routinely taken to health facilities for growth monitoring. Does this happen in your village? Can you explain what things are checked for by health workers when assessing growth of children? What does it mean to you?
- (10) For many years now in child care programs growth of young children has been assessed by measuring their weight for age. What do you think about this? What other issues would you suggest to be considered in assessing growth of young children? (For each response, ask why?)
- (11) What do people in your community think about height of a child? Does it have any association with good or bad health? (Probe on: Interpretations of short stature in children and determinants of height of a child; probe on difference between 'normal short stature and 'kudumaa' i.e., stunting). (probe about the past and now)
- (12) Some of the children appear to be too fat than others. What is your opinion on a growth of a child who is fat? (probe about the past and now).
- (13) Some of the children have low weight compared others of the same age. What are your opinions on a child who has low weight than others of the same age (probe what determines the weight of a child).
- (14) In this research we realized that there are practices that are conducted to facilitate healthy growth of a child since when it is born. Please tell me what are practices that parents in this community do to promote growth of their children (Ask the participants to narrate the practices from when a child is born up to age 5). (probe about the past and now)

D: Community Perceptions on growth faltering

- (15) In your community, how can a poorly growing child be described? (Probe about the past and now).
- (16) How can someone recognize that there is a problem in the growth of a child? (Probe on criteria used in identifying poor growth in children). (ask about the past and now).
- (17) Majority of under-five children in the country are reported to suffer from growth problems. In your experience, what might be the factors that contribute to poor growth of young children in your community (Probe on all perceived causes of poor growth including poor income, kubemenda, single

motherhood, mother's lack of time, infections, beliefs, food issues, environmental & socio-cultural limitations, etc.) (ask about the past and now).

- (18) Mothers are key caregivers of under-five children. In this research we realized that some of caregivers face some challenges that hinder their ability to provide good care to their children. In your experience, what might be possible factors that challenge the ability of mothers in your village to provide good care to their young children? (Probe on poor income, single motherhood, mother's lack of time, infections, beliefs, food issues, environmental & socio-cultural limitations, etc). (ask about the past and now).
- (19) What do parents / caregivers in your community usually do when they think that there is a problem in growth of their children? (Probe: for different actions that caregivers take and reasons for that e.g., go to health facilities, consulting traditional healers, use traditional herbs, -what motivates their decisions?). (ask about the past and now)
- What are specific health / growth issues in children that necessitate the decisions to consult traditional healer or use of traditional medicine?
- (20) What are traditional preventive measures that people in your community take against growth problems in their children? (Probe from when a child is born up to age five (For each practice probe for the reasons). (ask about the past and now).
- (21) What do you think should be done to make sure that children grow well? (ask about the past and now)

E: Feeding Practices

- (22) Kindly tell me about child feeding practices in your community. (Probe on the following:
- Timing of introduction of breast feeding
 - Timing of introducing complementary feeding (type of complementary food). Reasons for introducing complementary food before six months)
 - When do mothers wean their children? (Weaning food, reasons for weaning a child before reaching two years of age)
 - Type of food that is commonly fed to young children in her family (ask the participants to specify foods for various categories of under-fives)
 - How many times children are fed in a day, quantity, (ask this for various categories of under-five?)
 - Eating habits e.g., whether children and adults eat together in one bowl etc.
 - Preparation methods and storage of foods
- (23) We are now reaching the end of our discussion. Are there any other comments about children's growth that you want to make before we conclude?

Thank you for your time and participation to this study.



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Appendix 5 In-depth interview guide – Mothers

IDI Code number:

Date:

I would like to ask you some questions that will help me know more about you.

Participant's background information

Age	Tribe	Religion	Edu- cation level	Can you read?	Occupation	Marital status	No. of children	Living with father of child/ren?	Number of adults living with you?	Relation- ship with adults?
			Mother Partner	Yes No	Mother Partner	Single Monogamous marriage Polygamous marriage Cohabiting Separated Divorced Widow		Yes No		
Details about participant's under-five children										
Name of a child	Gender	Date of birth	Relation- ship	Still alive?	Age at last birthday?	If dead, age when s/he died.	If dead, perceived cause of child's death.			
	Boy Girl	Month Year.....		Yes No	Year					
	Boy Girl	Month Year.....		Yes No	Year					
	Boy Girl	Month Year.....		Yes No	Year					
	Boy Girl	Month Year.....		Yes No	Year					
	Boy Girl	Month Year.....		Yes No	Year					
	Boy Girl	Month Year.....		Yes No	Year					

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Opening questions

1. Would you please tell me something about your daily activities? (Probe on: main source(s) of family income)
2. What does taking care of a child entail? (Probe: Cooking for a child, feeding, bathing, putting a child to bed, setting a child up for pooping, cleaning a child after pooping, wash child's clothes, take a child to health care, education ...)
3. How do you describe a child? (age, not knowing things, helpless, does not know what is good and bad for him/her, preschool)

Perceptions of Child growth

4. How does a healthy child look like? (Probe on markers). How about the one who is not healthy?
5. What do you think about the health of [name]? Is she/he healthy? Why do you say so? (Probe for markers)
6. Please tell me about the growth of [name]? Is she/he growing well? If yes, how do you know that [Name] is growing well? [If not mentioned, probe: social interaction, weight, activeness, playfulness, eating habits, sleeping habits, emotional, cognitive ability, motor development, recognizing people / things, body size / being fat, height (Check for gender differences in each aspect).

-Ask for her perceptions of child's height (probe for her Interpretations of short stature in a child, and determinants of height of a child; difference between 'short stature and *kudumaa*: probe for markers of *kudumaa*)

-Probe for her opinion on the growth of a child who is fat (what makes a child to be fat?)

-Probe on her perception of child's weight in relation to her/his growth (determinants of weight of a child?)

-Probe: What do you do to make [name] grow well? (Probe: traditional preventive measures, sleeping under a bed net, environment is clean, take to hospital for check-up, nutritious food etc). What more do you wish you could do?

-In case [Name] was mentioned to not grow well, ask: why do you think so? Please tell me about the growth experience of [Name]. (Probe on markers i.e., physical appearance, social interaction, weakness, not standing, inactive, not speaking, skin, hair, cheeks).

-What do you think made [Name] to not grow well?

-What did you do when you realized that there is growth issue in [Name]? (Probe for different actions e.g., go to health facilities, consulting traditional healers, use traditional herbs, -Ask what motivates her decisions?)

-(Please ask about growth status that was not the case in QN 6). Ask: do you know of a child that grew well? / did not grow well? Please tell me about her/him. How did he/she look like?

7. Are you aware of 'utapiamlo'? Have you ever seen a child with Utapiamlo? How does s/he look like? (Probe on markers)

Contextual factors for child growth

8. As a mother, what are your responsibilities within the family? How does that influence growth of your children?
9. Who helps you with taking care of the children when you are (a) at home not busy (b) at home but busy (c) away from home for attending your daily responsibilities (d) the child is ill? - In each response probe for type of support received).
10. How does your husband/partner support you in taking care of [Name]? (Probe on types of support from husband/partner e.g., taking children to growth monitoring, hospitals, paying for school fees, feeding children, etc).
11. Please tell me something about the environments that underlie your ability to provide good care to [Name]. (Probe on: Husband's / partner's behavior, relationship with her husband or child's father, access to resources, control over resources & family income, division of labor, child's behaviors, environment, health system, food issues, community factors, income, health issues, beliefs, socio-cultural practices, marital status i.e., single, polygamous married etc.).
 - Can you think of a time that you wanted to take care of your child, but you could not? Please tell me about that?)
12. As a mother, what support do you need from your husband/partner, family, community, environment, health workers, policy makers) to make [Name] grow well?
13. What do you think of 'kubemenda'? Has it ever happened to a child of any of people you know? Please tell me a story about it. (Probe on implication to couple's relationship, community's attitude? Who is generally blamed, in what way? What do you think about it?)
14. Do you know of a person that stays with a child who is not her/his own? What are the reasons that made that person to stay with the child? How do you consider the growth of that child? Why do you say so? (Probe on environment that the participant thinks influence growth of that child).
15. In this village, where do you get water for domestic use? (probe on multiple water sources, main and regular water source for drinking, how she prepares water for drinking, child feces disposal, place for hand-washing, use bush/field for open defecation, reliability and seasonality of water sources, time to collect water during wet and dry seasons).

Child feeding practices

16. How did you feed yourself when you were pregnant (probe on down-eating, ANC visits, advice given by ANC workers, food taboos, why?)
17. Kindly tell me about your child feeding practices. (Probe on the following:
 - Breast feeding (initiation, colostrum, number of feeds a day, night feeding)
 - How do you decide to give the child complementary food? (Probe on timing and reasons, including markers of growth, gender differences)
 - What types of complementary food do you provide to your children (water, gripe water, juice, porridge, mashed potatoes, cow's milk: probe on how cow's milk is given, food taboos) (ask the participant to specify foods for various categories of under-fives)
 - How many times children are fed in a day (ask this for various categories of under-five?)
 - When do children start eating with the adults (age)



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- Eating habits e.g., whether children and adults eat together in one bowl etc. (probe food distribution)
- Preparation methods and storage of foods
- When did you stop breastfeeding your children and why? (Probe on gender differences)
- Mother's knowledge on recommendations in terms of breastfeeding when a mother is HIV positive?

Experience with growth monitoring services

18. What do you do when you realize that [Name] is ill? (Probe for different actions e.g., go to health facilities, consulting traditional healers, use traditional herbs, -Ask what motivates her decisions? Check for availability of health facility in the area - check who is involved in child health care decisions?)
19. Please tell me about growth monitoring services offered in your area (probe on a place where it is offered, who is providing the service, how often, if she takes her child to growth monitoring)
20. When was your last visit to the clinic? Kindly tell me what happened during this visit from the beginning to the time you left the facility).
 - What did the health worker tell you about growth outcome of your child? (Weight improving / not). In case weight drop was not mentioned, Probe: during any of your visits, have you ever been told that your child's weight has dropped / not increasing? How did you feel? What was your personal opinion on your child's growth? What health information, advice provided? What did you do to improve weight of your child?)
21. Can you show me your youngest child's growth chart? What was your child's weight at birth? How do you understand the chart? (colors, position in the chart) What do you think about this? (Probe on participant's opinion on other criteria to be considered in assessing growth of under-five children? Note if both weight and height have been measured.
22. Have you ever missed any of your child's growth monitoring clinics? What were the reasons? (Probe for participant's view on the reasons that make mothers abandon attending growth monitoring clinics)
23. We are now approaching end of our discussion. What do you suggest to be done so as to improve growth monitoring activities?

Appendix 6 In-depth Interview guide – Fathers

IDI Code number:

Date:

Participants' background information

I would like to ask you some questions that will help me know more about you.

Age	Tribe	Religion	Edu- cation level	Can read	Occupa- tion	Marital status	No of children	Living with mother of child/ren?	Number of adults living with you?	Relation- ship?
			Father Partner	Yes No	Father Partner	Single Monogamous marriage Polygamous marriage Cohabiting Separated Divorced widower		Yes No		
Details about participant's under-five children										
Name of a child	Gender	Date of birth	Relation- ship	Still alive?	Age at last birthday?	If dead, age when s/he died.	If dead, perceived cause of child's death.			
	Boy Girl	Month Year.....		Yes No	Year					
	Boy Girl	Month Year.....		Yes No	Year					
	Boy Girl	Month Year.....		Yes No	Year					
	Boy Girl	Month Year.....		Yes No	Year					
	Boy Girl	Month Year.....		Yes No	Year					



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Opening questions

1. Would you please tell me something about your daily activities? (Probe on: main source(s) of family income).
2. What does taking care of a child entail? (Probe: purchasing food, cooking for a child, feeding, bathing, putting a child to bed, setting a child up for pooping, cleaning a child after pooping, wash child's clothes, take a child to health care, education etc...)
3. How do you describe a young child? (age, not knowing things, helpless, does not know what is good and bad for him/her, preschool).

Perceptions of Child growth

4. How does a healthy child look like? How about the one who is not healthy? (Probe on markers).
5. What do you think about the health of [name]? Is she/he healthy? Why do you say so? (Probe for markers)
6. Please tell me about the growth of [name]? Is she/he growing well? If yes, how do you know that [Name] is growing well? [If not mentioned, probe: social interaction, weight, activeness, playfulness, eating habits, sleeping habits, emotional, cognitive ability, motor development, recognizing people / things, body size / being fat, height (Check for gender differences in each aspect).

-Ask for her perceptions of child's height (probe for her Interpretations of short stature in a child, and determinants of height of a child; difference between 'short stature and *kudumaa*: probe for markers of *kudumaa*)

-Probe for her opinion on the growth of a child who is fat (what makes a child to be fat?)

-Probe on her perception of child's weight in relation to her/his growth (determinants of weight of a child?)

-Probe: What do you do to make [name] grow well? (Probe: traditional preventive measures, sleeping under a bed net, environment is clean, take to hospital for check-up, nutritious food etc). What more do you wish you could do?

-In case [Name] was mentioned to not grow well, ask: why do you think so? Please tell me about the growth experience of [Name]. (Probe on markers i.e., physical appearance, social interaction, weakness, not standing, inactive, not speaking, skin, hair, cheeks).

-What do you think made [Name] to not grow well?

-What did you do when you realized that there is growth issue in [Name]? (Probe for different actions e.g., go to health facilities, consulting traditional healers, use traditional herbs, -Ask what motivates her decisions?)

(Please ask about growth scenario that was not the case in QN 6). Ask: do you know of a child that grew well? / did not grow well? Please tell me about her/him. How did he/she look like? -What do you think contributed to poor growth of that child?

7. Are you aware of 'utapiamlo'? How does a child with 'utapiamlo' looks like? (Probe for markers); probe for his opinions on causes and remedies of 'utapiamlo' in children.

Contexts of child growth

8. As a father, what are your responsibilities within the family? How does that influence growth of your children?
9. Who takes care of [Name]? Who else helps her with taking care of [name] when she is(a) at home but busy (b) away from home for attending her daily responsibilities (c) the child is ill (d) the caregiver is ill? - In each response probe for type of support provided by each person).
 - Probe: How do you support a mother of [name] in taking care of her/him? (Probe on types of support e.g., taking children to growth monitoring, hospitals, paying for school fees, feeding children: Check for direct care that a father provides to [Name]; and the ones that a father has never provided to [name]. Why?
 - Probe for the role of his (a) mother and his (b) mother in-law in care provision to his child (staying with a child, advice on child feeding, decision making on child care, caring mothers during pregnancy, advice on child's illness & treatments, a help in initiating and ending breastfeeding, etc)
10. What is your opinion on the care that your wife / primary caregiver of your child provides to him/her? (Probe: At some points, have you ever been not happy with the care that your wife/caregiver provides to your child? Please tell me about that.
 - Probe: please tell me about the environment that you think shape the quality of care that she provides to your [name] (probe for favorable and unfavorable factors)
 - As a father, what more support do you think you need to provide to your wife to make [Name] grow well?
11. As a father, please tell me something about the environments that mediate your efforts to provide good care to [Name]. (Probe on: wife's / partner's behavior, relationship with his wife or child's mother, access to resources, decision making on resources, family income & child care; division of labor, child's behaviors, environment, health system, food issues, community factors, income, health issues, socio-cultural norms over foods, beliefs, socio-cultural practices, marital status i.e., single, polygamous married etc).
 - Can you think of a time that you wanted to take care of your child, but you could not? Please tell me about that?)
12. As a father, what support do you need from your wife/partner, family, community, environment, health workers, policy makers) to make [Name] grow well?
13. What do you think of 'kubemenda'? Has it ever happened to a child of any of people you know? Please tell me a story about it. (Probe on implication to couple's relationship, community's attitude? Who is generally blamed, in what way? What do you think about it?)
 - Probe for: his opinion about growth of the baby who (a) is conceived while a mother is still breastfeeding (b) growth of unborn child whose parents continue having sex.



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14. Do you know of a person that stays with a child who is not her/his own? What are the reasons that made that person to stay with the child? How do you consider the growth of that child? Why do you say so? (Probe on environments that the participant thinks influence growth of that child).
15. In this village, where do you get water for domestic use? (probe on multiple water sources, main and regular water source for drinking, how they prepare water for drinking, child feces disposal, place for hand-washing, use bush/field for open defecation, reliability and seasonality of water sources, time to collect water during wet and dry seasons).

Experience with growth monitoring services

16. What do you do when you realize that [Name] is ill? (Probe for different actions eg. go to health facilities, consulting traditional healers, use traditional herbs, -Ask what motivates his decisions? Check for availability of health facility in the area - check who is involved in child health care decisions?)
17. Please tell me about growth monitoring services offered in your area (probe on a place where it is offered, who is providing the service, how often, if he takes his child to growth monitoring)
18. Can you show me your youngest child's growth chart? What was your child's weight at birth? How do you understand the chart? (colors, position in the chart) What do you think about this? (Probe on participant's opinion on other criteria to be considered in assessing growth of under-five children? Note if both weight and height have been measured.
19. We are now approaching end of our discussion. Do you have anything more to add on your child's growth and the environment of her/his care?

Appendix 7 Key-informant interview guide

Participants' background information

Age.....

Sex

Tribe

Religion

Education level

Specialization

Marital status.....

Opening questions

1. Please tell me about yourself. How long have you lived in this village? How long have you worked as a health worker (Probe for specific roles as a health worker)?
2. How would you describe a young child? - as understood in your community? (age, not knowing things, helpless, does not know what is good and bad for him/her, preschool)
3. Where do people in this village get health services? (Probe for all sources of health)

Perceptions towards optimal child growth

4. Can you describe who is a healthy child as understood in your community? How about the unhealthy one? (Check if the informant has different opinion on how a healthy and unhealthy child looks).
5. In your community, who is considered to be a child who is growing well? (Probe: How can someone know that a child is growing well? (Dimensions: social interaction, weight, activeness, playfulness, eating habits, sleeping, emotional, cognitive, motor development, recognizing people, things, being fat, height; probe on how a child is expected to grow from when it was born to age (Check for gender differences).
 - Ask for community's & informant's perceptions of child's height (probe for Interpretations of short stature in a child, and determinants of height of a child; difference between 'short stature and kudumaa: probe for markers of kudumaa)
 - Probe for community's & informant's perception of the growth of a child who is fat (what makes a child to be fat?)
 - Probe on perception of child's weight in relation to her/his growth (determinants of weight of a child?)
6. How can a child who is not growing well be described? (Probe: How can someone recognize that a child is not growing well? (Probe on criteria used in recognizing poor growth – both growth faltering and over nutrition).
7. Please tell me something about the children that come to the child care clinic / health facility for growth monitoring. Generally, what can you say about their growth? Are they growing well? Why do you say so? [probe for markers]



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Contexts of child growth

8. What are common growth problems among young children in your community?
9. What might be the factors that contribute to poor growth of young children in Malangali village? (Probe on: parents' behavior, parents' relationship, down-eating during pregnancy, access to resources, decision making over resources, family income & child health care; division of labor, child's behaviors, environment, health system, food issues, community factors, income, health issues, beliefs, socio-cultural practices, marital status i.e., single, polygamous married etc).
 - Do you know of any child/children who live in a disadvantaged environment? Please tell me a story about that. (Probe about the environment, quality of care to the child & participant's opinion on growth of that particular child)
10. Please tell me something about 'kubemenda' – as understood in this community? (Probe: How does it happen? Signs? Remedies? How do the community members take it? Who is generally blamed, in what way? Any possible implication to couple's relationship?
 - Probe for informant's opinion on kubemenda (myth or reality?).
 - If s/he considers it to be a myth, what does s/he think it is the case?
 - If s/he considers it to be a reality, please ask: Has it ever happened to a child of any of mothers who come for growth monitoring / people you know? Please tell me a story about it, and service provided to a child.
11. What support do you think parents/caregivers in this village need from family, community, health workers, policy makers etc so that their children grow well?

Experience with health services / growth monitoring

12. What are common growth problems among young children in your community?
13. What do parents / caregivers in this village usually do when they think that there is a problem in growth of their children? (Probe: for different actions that caregivers took/take and reasons for that e.g., go to health facilities, consulting traditional healers, use traditional herbs, -what motivates their decisions?).
 - Ask for narratives about any specific health / growth issues in children that necessitate the decisions to consult traditional healer or use of traditional medicine?
 - Probe on self-medication (reasons, impacts on child's health)
 - Knowledge about past & present interventions implemented in the village to promote child growth
14. Please tell me about growth monitoring services that you offer in your area (probe on the process of service provision, a place where it is offered, who is providing the service, how often, things that are checked for, charts used, opinions on mothers' comprehension of the charts & other services provided during the clinic).

15. For many years now in child care programs growth of young children has been assessed by measuring their weight and sometimes height for age. What do you think about this?
 - Have you had some experiences when you suspected problems while the measures were alright or other way? Please describe that case / experience.
 - What other issues would you suggest to be considered in assessing growth of young children? (For each response, ask why?)
16. In growth monitoring practice, when you identify a child with growth faltering, what do you usually do? Please tell me about the last case of growth faltering and all things that happened regarding that child? What was caregivers' reaction on the feedback regarding growth outcome of her child?
 - Probe about challenges that the informant face in providing growth monitoring service.
17. Elsewhere, the experience shows that majority of mothers abandon attending growth monitoring clinics during the child's first or second year of age. What is the experience in this community? What do you think might be the reasons for this?
18. We are now approaching end of our discussion. Do you have anything to add on child growth and growth monitoring?

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Appendix 8 Participant information sheet & consent form

Title of Study: Ethnography of Child Growth in Tanzania: Socio-cultural and biological context of growth among under-five children.

Introduction:

I am, a Tanzanian PhD student at Groningen University, the Netherlands. I'm conducting my study on nutrition and children's growth. My PhD research is funded by the University of Groningen through the grant of the Project entitled "Normative indicators of child health and nutrition- One size fits all?". This grant is offered by Dutch Science Foundation. Its mission is to facilitate research that contributes to sustainable development and poverty reduction.

The main aim of the study is to find out how people in your village understand child growth and criteria they use in assessing growth of their young children. The research also seeks to get people's opinion on factors and environments that contribute to growth problems among young children in your village as well as actions and practices that caregivers do to address growth problems in their young children. Additionally, the research will also solicit information from mothers and health workers on their experience with growth monitoring service provided in health facilities available in your village. The reason we want to know about these issues is not specific to your village. As you may be aware, growth monitoring activities (measuring weight and heights of children) has been in place for many years in Tanzania. One of the objectives of this practice is to timely identify children at risk of health / growth problems, provide immediate solutions and eventually reduce deaths among young children. Despite this, it is reported that growth problems are persistent among majority of children in Tanzania. We think that growth monitoring practice was developed with little knowledge on indigenous understanding of child growth. We believe that it is important to understand what you, as experts know about child growth, how you recognize that your child is growing well / not well as well as actions that you take in dealing with growth issues in your young children.

Given that you are part of this village, we would like you to take part in interviews/ group discussion with other people from the village. During interviews/ group discussions, we will discuss some questions about your knowledge and opinions on issues related to under-five children's growth and monitoring of their growth. The information that you will provide is valuable to this research and it will help in informing policy makers and child care programmers about the local knowledge on child growth thus being able to develop appropriate interventions for better health of young children in Tanzania. Before you decide whether to participate, we would like to explain to you important information regarding this research and what it will involve. Please feel free to ask any question regarding this research or more information on anything that you don't understand.

Why have you been chosen for this study? Participants for interviews / group discussions include parents with under five children (both mothers and fathers) , elder women, health workers, Traditional Birth Attendants and traditional healers from this community. Therefore, you have been requested to participate in this research given your position in this community as listed above.

What will happen?

If you agree to take part in this study, we will discuss some questions on your experience and knowledge about issues related to growth of under-five children and views on child growth monitoring practices. Group discussion / interviews will be conducted in an area with maximum privacy. During group discussion / interviews, we would like to take notes and tape record the conversation so as to ensure that we correctly record the information you provided. However, if you are not comfortable with the recording, please tell me. All recordings and notes will be taken anonymously and be kept in secure places and only people who are responsible for data analysis will be allowed to access them. In the discussion / interviews, there are no right or wrong answers, so please feel free to contribute openly.

What will happen to the information that you provide?

The information you give us is very helpful and we will treat it with respect. Your name will not be entered into the tape recorder, so no one (except for other participants in your group) will be able to know how you personally answered the questions. The information will be stored in central computers and studied by the research team. The information will be used only for the purpose of the research which in this context is to refine the research tools for the main fieldwork.

Do you have to participate? Your participation to this study is voluntary. We would greatly value your participation in this research, but you do not have to participate if you do not wish to. Also, if you start to answer the questions and then decide that you want to stop, you can do so at any time. You do not have to give any reason. Your decision to not participate / withdraw your participation from the study will not have any impact to your access to health care or any related services.

How do you benefit from participating? There is no immediate benefit to you now. However, we hope that your answers will help in refining research tools for the main study which will then enable the researcher to collect important evidence to be used by program managers and policy makers to improve the way services for child growth monitoring are conducted in the community.

Any risks / Discomforts for participating in this study

There are no direct risks to you from participating in this study. Questions to be asked during the discussion / interviews are not about sensitive issues but may cause some psychological discomforts. Thus, if you feel uncomfortable to answer any of the asked questions please feel free to not answer them.

Will you be paid for participating? Participation to this study will cost you nothing except your time. There is no any payment that will be made to you for participation to this study.

What if you have some more questions? If you have any questions you can ask me now or later today. Otherwise, you can contact Ms. Zaina Mchome, Telephone number: +255-684-476237

What happens next? Please ask if you have any more questions. You do not have to take part in the study, but if you would like to do so, then please complete the consent form attached.



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Written Informed Consent Form

Research Topic: Ethnography of Child Growth in Tanzania: Socio-cultural and biological context of growth among under-five children.

PLEASE CIRCLE THE CORRECT ANSWER

I have read (or researcher has read to me) information regarding this study and the reasons for the researcher to live and work in my village. **YES / NO**

I had an opportunity to ask questions that I have about the research and all my questions have been satisfactorily addressed. **YES / NO**

I have understood the purpose of the research. **YES / NO**

I feel that I understand the purpose of today's research activity. **YES / NO**

If I agree to participate in this interview / FGD, I understand what I will be required to do. **YES/NO**

I know that I have the right to refuse to participate in this research, stop my participation at any time or refuse to answer some questions without any consequences to myself or my family. **YES/NO**

I also know that anything that I say during the interview will be kept secret and anonymous **YES / NO**

I voluntarily agree to participate in this study. **YES / NO**

If 'NO' to any of the above, the participant is ineligible to take part

Signature of participant

Signature or Thumbprint	Date of signature

Signature of researcher taking consent

Signature	Name	Date of signature

Appendix 9: Codebook

Code name	Code Description
Daily routine	This node will be used to cover responses whereby participants explain about their daily activities.
Source of income	This node will be used to cover what participants mentioned as their income generating activities.
Child care	This node documents all responses regarding participants' opinions about what child care entails.
Good father	This node will capture opinions on who people think is a good father to his young child/ren.
Good mother	This node will capture opinions on who people think is a good mother to her young child/ren.
Views / perceptions on roles of a father for child to grow.	This node will be used to capture general community opinions on what are the roles of a father important for optimal growth of a child.
Views / perceptions on roles of a mother for child to grow.	This node will be used to capture general community opinions on what are the roles of a mother important for optimal growth of a child.
Foodstuffs available	This node will be used to capture all types of foodstuffs mentioned to be available in the study setting.
How people get foods	This node will be used to capture responses about ways through which people in the e community get food.
Favorite food	This node will be used to capture main types of food that people in the community like to eat.
Perceptions of a 'young child'	This node generally covers all responses that show participants' descriptions of a young child.
Age	This node is used to capture all ideas by participants that define a young child based on their age.
Reproduction	This node is used to document participant's conceptualizations that refer a young child as an individual's reproductive outcome i.e., the one that someone gave birth to.
Helpless	This node documents participants' responses that describe a child as someone who is dependent, cannot help herself / someone that needs to be taken care of by parents / caregivers.
<i>'Taifa la kesho'</i>	This node is used to capture participants' responses that describe a child as a future generation / future investment.
Behavior	This node is used to document ideas that describe a young child based on her/his behavior.
A gift from God	This node will be used to capture responses that describe a young child as a gift from God
Protection	This node is used to capture caregivers' expressions describing a child as someone who needs to be protected as s/he cannot protect her/himself.

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Does not know good or bad	This node is used to capture all ideas where participants described a young child as someone who is not self-conscious – i.e., s/he does not know what is good, what is bad, wrong or right, not aware of the social and moral expectations.
Intelligence	This node is used to capture all responses that describe a young child in terms of her cognitive ability.
Preschool	This node is used to document all ideas by participants that define a young child basing on her/his school involvement.
Communication skills	This node is used to document ideas that describe a young child in terms of their communication capabilities.
Physical appearance	This node is used to capture participants' responses that describe a young child in terms of how s/he looks.
Perceptions of a 'Healthy child'	This node will be used to document all views from participants that describe a healthy child
Good weight	This node is used to capture participants' opinions / views that a healthy child is the one with good weight / is heavy.
<i>'Ana mwili'</i>	This node will be used to capture all ideas from participants that describe a healthy child in terms of his body size.
<i>'Haumwiumwi'</i>	This node captures all opinions where people describe a healthy child as the one who does not get sick frequently.
Eating habits	This node is used to capture views that child's good appetite is a marker of good health in a child.
S/he sleeps well	This node is used to capture participants' responses that describe a healthy child as the one who sleeps well / has good sleep.
'Fever passes away from her'	This node captures all opinions where people consider child's freedom from intermittent malaria infection as a marker of good health in a child.
Clever eyes	This node is used to document participants views that describes a healthy child basing on the appearance of his/her eyes.
Healthy skin	This node will be used to document all views from participants that mention a healthy child as the one who has nourished skin.
<i>'Mwili mtekemteke'</i>	This node will be used to document all views from participants that consider a healthy child as the one who has spongy body.
Likes to play	This node is used to capture ideas where the participants described a healthy child as the one who is playful.

<i>'Kachangamka'</i>	This node is used to capture ideas whereby child's liveliness is considered as important a marker of good health.
Not weak	This node is used to capture participants' views where they mention that a health child is not weak.
Robust	This node is used to capture ideas where participants consider a physical strength as an indication of good health in a child.
S/he is cheerful	This node is used to capture ideas by participants whereby they say that a healthy child is the one who is joyful most of the time.
<i>'Mtundu'</i>	This node is used to capture participants' views that a healthy child is the one who is naughty.
Relationship with peers	This node is used to capture views where participants consider that a healthy child is the one who has good relationship with peers.
<i>'Ambaye hajabemendwa'</i>	This node is used to capture participants' responses whereby they refer to a healthy child as the one whose growth is not affected by violation of postpartum sex taboos.
Conceptualizations of 'Unhealthy Child'	This node will be used to document all views from participants that describe unhealthy child
Weak hair	This node will capture all views that mention poor quality of hair as an indicator of poor health in a child.
S/he gets fever regularly	This node is used to capture all views where participants comment that unhealthy child is the one who gets malaria infections frequently.
Diseases do not pass away from him/her	This node is used to capture all views from participants that describe unhealthy child as the one who is susceptible to infections.
Wrinkled skin	This node is used to capture all ideas where participants mention folded skin as one of criteria they use to recognize a child who is unhealthy.
Cranky child	This node is used to capture views where participants describe unhealthy child as the one who cries a lot.
Dry skin (<i>ngozi kavu</i>)	This node is used to capture all responses that mention dry skin as one of criteria used by participants to identifying poor health in a child.
Bloated stomach	This node is used to capture all responses whereby participants mention swollen tummy as one of criteria they use in identifying poor health in a child.
Swelling cheeks	This node is used to capture all ideas that mention swelling cheeks as one of the signs on unhealthy child.
<i>'Kimbaumbau'</i>	This node is used to capture all views whereby participants describe unhealthy child as the one who is skinny.



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S/he has no kilo	This node is used to capture all views whereby participants describe unhealthy child as the one who has poor weight.
Weak body	This node is used to capture all views whereby participants describe unhealthy child as the one whose body lacks strength.
Shabby	This node is used to capture all views whereby child's being shabby is mentioned as an indicator of being unhealthy.
'Mnyonge'	This node is used to capture ideas where participants comment that unhealthy child always look wretched
Does not like to play	This node is used to capture all views whereby participants describe unhealthy child as the one who does not like to play.
s/he is so calm	This node is used to capture all views whereby participants mention child's extreme calmness as an indication of poor health.
Not eating well	This node is used to capture all views whereby participants consider loss of appetite an indicator of poor health in a child.
'Weak eyes'	This node is used to capture all views whereby participants mention weak eyes as a marker of poor health in a child.
4.0 Conceptualizations of ideal / healthy growth	This node will document caregivers' responses that describe a well growing child and markers they use in ascertaining healthy growth in a child
A cry at birth	This node will document all expressions that mention child's cry at birth as important marker of healthy growth.
Attention to the presence of people, sound, and light	This node will be used to capture expressions whereby participants consider a baby's attention to the presence of people, sound and light as an indication of good growth.
Likes attention and responds to it by smile	This node will be used to capture expressions whereby participants consider that a well growing child likes attention and responds to it by smile.
Being chubby	This node will be used to capture all responses by participants describing a well growing child as the one who is fat. It will also document local markers used to know if a child gains weight / is becoming fat.
Being free of illness	This node will be used to document all responses by participants that described a child who is growing well as resistant to illness, using phrases such as 'fever passes away from her [<i>homa zinampitia mbali</i>],' 'she does not get fever frequently,' s/he 'is not frequently ill [<i>haumwiumwi</i>],' and s/he 'has ordinary malaria fever' [<i>homazakawaida</i>].

'She has good kilos'	This node will be used to capture all responses by participants that mention good weight / weight gain as a marker for healthy growth. It will also include all ideas on how caregivers know that a child has sufficient kilo.
Strength to sit/crawl/walk	This node will be used to capture all responses that mention the child's attainment of motor milestones as sitting, walking, running as a marker of healthy growth.
Smile / talk on schedule	This node will be used to capture all responses that mention the child's ability to smile / talk on expected time as a marker of healthy growth.
Growing in height ['anarefuka']	This node will be used to capture all responses by participants mentioning that a well growing child is the one who grows tall. Will also document ways on how caregivers recognize that a child is growing tall.
Behavioral change & compliance	This node is used to capture participants' responses mentioning child's adaptation to the social environment as a marker of healthy growth with statements such as "a well growing child is the one who adheres to the familial/social expectations / role plays good behavior s/he sees around / whose behavior is changing from bad to good / the one with good manners.
Does not cry often	This node will be used to capture all responses whereby participants explain that a well growing child is the one who does not cry often / with no good reason
Ability to eat well	This node will be used to capture all responses whereby participants explain that a well growing child is the one who eats well (stops when s/he is full, s/he is not food picker, eats all kinds of food)
S/he is lively ['Amechangamka']	This node will be used to document all responses from participants which indicate that a well growing child is the one who is active / energetic.
Playfulness	This node will be used to document all responses from participants which indicate that a well growing child is the one who is playful / like to play with others more than being carried / changes type of plays as s/he ages.
Cognitive development	This node will be used to capture all responses from the participants that a well growing child is smart/intelligent (has good memories, understands parents' instructions, is clever [mjanja], inquisitive, creative, etc.



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Social interaction	This node is used to capture all responses that explain a well growing child as the one who actively interact with peers
Eyes	This node will be used to capture all views from parents whereby they mention that they can know if a child is growing well by looking at children's eyes.
Nourished skin	This node will be used to capture all responses by participants that mention nourished skin as a maker for healthy growth.
Naughtiness	This node will detail all responses that mentioned naughtiness as an indicator of healthy growth.
Good sleep	This node will be used to capture all responses whereby participants explain that a well growing child is the one who has good sleep.
Gender	This node will be used to capture all expressions that indicate gender differences in child growth
Cheerfulness	This node will be used to capture all responses by participants describing a well growing child as the one who is cheerful.
Comparison	This node will be used to capture all views by parents whereby they explain that they use to compare growth of their children to other children of similar age to ascertain healthy growth
Growth promotion practices	This node will be used to document all actions mentioned by participants as their efforts to enhance healthy growth / prevent poor growth in their children.
Mothers' wishes	This node will collect all responses that mothers mentioned things they wished they could be able to do to promote healthy growth in their young children.
Fathers' wishes	This node will collect all responses that fathers mentioned as things they wished they could be able to do to promote healthy growth in their young children.
Conceptualizations of lack of growth in a child	This node is used to capture participants ideas that describe a poorly growing child and specific markers they use to recognize poor growth in a child.
Susceptibility to illness	This node will be used to document all responses by participants that described a child who is not growing well as not free from illnesses, using phrases such as 'fevers does not pass away from her/him [<i>homa hazimpitii mbali</i>],' 'she has frequent fever [<i>homa za mara kwa mara</i>],' 'is frequently ill [<i>anaumwaumwa</i>],' is usually admitted when getting malaria, has persistent fever, fever weakens her.
Insufficient weight	This node will be used to capture all thoughts that consider poor weight or weight loss as a marker of poor growth in a child. It will also include ideas on

	how caregivers recognize that a child has insufficient weight
'Harefuki' [does not become tall]	This node is used to capture responses whereby participants describe a poorly growing child as the one who does not grow tall. It will also include markers that caregivers use to ascertain if a child is not growing tall.
Skinny body	This node is used to document responses whereby participants explain that a poorly growing child is too thin, and wears small size clothes for her age
'Hachangamki' [not lively]	This node is used to document responses by participants whereby they explain that a poorly growing child is lazy, dormant, not energetic / weak.
Delayed attainment of elementary bodily skills	This node is used to gather ideas from participants whereby they mention child's failure to achieve essential elementary bodily skills such as teething, talking, sitting, crawling, walking, running and as a marker of poor growth.
Not cheerful	This node is used to capture participants' ideas that a poorly growing child is not cheerful / is usually unhappy / looks wretched [<i>'mnyonge'</i>]
Too calm	This node is used to capture participants ideas whereby they consider a child who is too calm as the one who is poorly growing.
Poor eating habits	This node is used to document views whereby participants describe a poorly growing child as the one who does not eat well (e.g., poor appetite, eating too much or too little than expected, being picky)
Difficulty sleep	This node is used to document ideas whereby participants mention that a poorly growing child has difficulty sleep.
Comparison with age mates	This node is used to document responses whereby participants explain that they recognize if a child is not growing by comparing her growth with other children of similar age.
Belly shape	This node is used to capture responses whereby participants mention swollen tummy as a marker that helps them to recognize poor growth in a child
Cheeks	This node is used to capture responses whereby participants mention swollen cheeks as a marker that helps them to recognize lack of growth in a child.
Hair quality	This node is used to capture responses whereby participants describe a poorly growing child in terms of his / her hair texture or color.
Unhealthy skin	This node is used to capture responses whereby participants mention unhealthy skin (pale, folded, dry) as a marker used to recognize lack of growth in a child.



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Not playful	This node is used to capture all responses that depict a poorly growing child as not playful, and that s/he likes to be carried most of the time instead of playing.
Bad manners	This node is used to document responses whereby participants describe a poorly growing child as the one who has unacceptable behaviors (disrespect for their parents, a child telling lies, using obscene language, extreme naughtiness, stubbornness etc.)
Poor social interaction	This node document participants' expressions that a poorly growing child has less / poor interaction with peers / other people around them.
Actions taken when one suspects poor healthy / growth in a child	This node will document all responses on what parents usually do when they notice poor health / growth in their children. It also documents places where people in the community get health services in case of child poor growth
Self-medication	This node will be used to captures ideas where people mentioned making diagnosis themselves and providing medicine to children when poor health/growth is detected.
Drug shops	This node is used to capture all views whereby people say that they visit drug shops and purchase medicines without prescription of a professional doctor.
Go to hospital	This node is used to capture all views whereby people say that they take their children to hospitals when they find something wrong in their health / growth.
Consult traditional healers (THs)	This node is used to capture all views whereby participants say that they consult THs when they think that there is growth problem in their children
Issues taken to THs	This node will document all ideas where participants mention health / growth problems that are commonly taken to THs for treatment.
Services by THs	This node details expressions mentioning services provided by THs in the community related child health or growth.
Community Health worker (CHW)	This node is used to capture all views whereby participants say that they consult CHW when they think that there is growth problem in their children.
Roles of CHW	This node is used to capture information about the specific roles of a CHW in the community.
Use of local herbs	This node is used to capture all views whereby community members say that they use local herbs when they notice poor health / growth in their children
Religious leaders	This node is used to capture all views whereby community members say that they consult religious leaders for prayers for child protection / when they think that there is growth problem in their children

Panadol	This node will be used to capture all responses by participants whereby they mention that they give Panadol to their children as first aid while getting ready for proper medical treatment
Self-medication	This node will be used to capture all responses by participants whereby they mention that they give medicine to their children when sick without professional medical doctors' prescriptions. It also includes ideas whereby using remaining drugs at home is mentioned as action taken by caregivers when suspecting health problem in a child.
Consulting elders / relatives	This node is used to capture all views whereby participants say that they consult elders or relatives when they think that there is growth problem in their children
When visiting drug shops	This node is used to capture all ideas mentioned as reasons for why people decide to buy medicines from drug shops without consulting a doctor
When visiting health facility	This node is used to capture all ideas mentioned as reasons for visiting health facility for health/growth problems in children
When visiting traditional healers	This node will be used to capture ideas that participants provide as motivation for visiting traditional healers for health / growth issues in their children
Specific health/growth issues for visiting TH	This node is used to document what participants mentioned as specific health / growth issues in children commonly taken to traditional healer or handled through traditional medicine
Traditional Birth Attendant (TBAs)	This node will be used to document views whereby participants mention to consult TBAs for different reasons.
TBA services	This node will be used to document to capture what participants mentioned as the common issues taken to TBAs, services offered by TBAs, a place where it is offered as well as process of service provision
TBAs roles in promoting child growth	This node will document responses whereby TBAs explain different ways in which they contribute to growth / health of young children in the community. It will also capture stories by TBAs about child growth / health issues that they have been dealing with.
TBAs challenges	This node is used to capture what TBAs mention as key challenges that they face in fulfilling their duties
Conceptualization of and meanings attached to childhood height and short stature	This node is used to capture caregivers' knowledge, beliefs and perceptions of child height in relation to growth, and the meanings they attach to short stature

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Height in relation to growth/nutrition	This node captures participants knowledge and opinions on the relationship between height and child's growth.
Height in relation to health	This node captures participants knowledge and opinions on the relationship between height and child's health.
"Ufupi" and "kudumaa" differ	This node details participants' expressions indicating that there are two types of short stature i.e., "normal short stature" [<i>ufupi wa kawaida</i>] and "stunted stature" [<i>ufupi wa kudumaa</i>]. The node will also capture the expressions that show the differences between the perceived types of short stature.
Stature is ascertained at birth	This node is used to capture all ideas where participants comment that the stature (shortness/tallness) of a child is normally ascertained at birth.
Heredity	This node is used to capture participants' views that stature (shortness/tallness) of a child is a function of genetics / heredity.
<i>Mpango wa Mungu</i> [God's will]	This node is used to capture all expressions indicating caregivers' belief that child's stature is a function of God's will [<i>Mpango wa Mungu</i>].
Cultural markers of kudumaa [stunting]	This node is used to capture responses whereby participants describe the local markers of kudumaa.
Short stature	This node is used to capture all expressions where participants consider shortness as a marker of stunting.
Mature face	This node is used to capture expressions where participants comment that a stunted child has a mature face comparable to that of an adult person.
Mature body	This node is used to capture participants' expression saying that a stunted child has a mature body (<i>mwili umekomaa</i>).
Skin condition	This node is used to capture participants' expressions that describe a stunted child in terms of his / her skin condition (e.g., mature or immature skin for her/his age, wrinkled skin like that of an elderly person, pale, dry, rough, and / or stiff skin).
Skinny-dry body [<i>mwili mkavu</i>]	This node is used to capture participants' responses that describes a stunted child as too thin that his/her muscles are visible through the skin.
Hair condition	This node is used to capture participants expressions that mention unhealthy hair [i.e., reddish/copper colored hair [<i>nywele za shaba</i>], dull hair, too soft hair like that of a newborn, tangled stiff hair etc.] as markers of stunting in a child.
Motor milestones	This node is used to capture participants expressions that describe a stunted child in terms of her ability to

	achieve the motor milestones (e.g., ability to crawl/stand/walk on schedule).
Intelligence [<i>akili</i>]	This node is used to capture expressions whereby participants comment that a stunted child has poor intelligence / cognitive ability.
Swollen belly	This node is used to capture expressions where participants mention a swollen belly as a marker use to identify stunting in a child.
Swollen cheeks	This node is used to capture expressions where participants mention swollen cheeks as a marker they use to identify stunting in a child.
Play and physical activity	This node is used to capture all views where participants comment that a child with stunting has no physical strength, has weak body, is not playful, is not active etc.
<i>Vigimbi</i> [tight calf muscles]	This node is used to capture views where participants explain that stunted child has thin arms and tight calf muscles [<i>vigimbi</i>].
Poor weight	This node is used to capture participants expressions that mention consistent insufficient weight / weight loss [usually marked in the red and gray shade of the growth chart] as a marker used to ascertain stunting in a child.
Frequent illnesses	This node is used to capture ideas where participants mention intermittent illness as a marker of stunting in a child.
Comparison to peers	This node is used to capture all expressions whereby participants explain that they can know whether a child is stunted through comparing her/his growth with the growth of other children, and particularly those of similar ages.
Cultural explanations for the cause of <i>kudumaa</i> [stunting]	This node represents the ideas about the knowledge, beliefs & perceptions about the etiology of stunting
<i>'Kubemenda'</i>	This node is used to capture the views that stunting is caused by parents' non-adherence to postpartum sexual abstinence.
Heavy works	This node is used to capture the views that stunting is caused by making children to carry objects that are too heavy for their age or to perform tough chores while still young.
Evil spirits / witchcraft	This node is used to capture the views that stunting is caused by witchcraft or evil spirits [<i>mdudu or upepo mbaya</i>].
Poor care	This node is used to document ideas where participants mention poor care including inadequate / poor nutrition and delayed medical care as causes of stunting in children.

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Infections	This node is used to document expressions where caregivers comment that child stunting is caused by frequent illness or prolonged illnesses.
Perceptions of Malnutrition [‘Utapiamlo’]	This node captures caregivers’ knowledge, beliefs and perceptions about the causes, symptoms, and ways to treat ‘utapiamlo’ [malnutrition]
Perceived causes of <i>utapiamlo</i>	This node is used to capture all views by participants about factors that causes malnutrition in children
Perceived symptoms of <i>utapiamlo</i>	This node is used to capture responses whereby participants describe how a child with malnutrition looks like [i.e., symptoms of malnutrition]
Treatment for <i>utapiamlo</i>	This node is used to capture participants knowledge on how to deal with malnutrition in a child.
Perceptions on fatness in a child	This node will be used to capture general perceptions on child fatness in relation to his/her growth.
Good Health	This node will be used to capture participants opinion that fatness in a child is an indication of good health.
Good care	This node will be used to capture all responses from participants that explain that fatness in a child indicates good care.
Beauty	This node will be used to capture all responses from participants that explain that fatness in a child indicates beauty.
A fat child is cherished	This node will be used by participants to document all ideas by participants that a fat child is valued by community members / community members like to carry him/her than a thin child
Good fat	This node will be used to document all ideas by participants that describe fatness in a child indicative of good health/growth.
Bad fat	This node will be used to document all ideas by participants that describe fatness in a child indicative of poor health/growth.
Knowledge / beliefs about causes of fatness	This node will be used to capture all ideas from participants that depict their knowledge and beliefs about factors that make a child to be fat.
Genetics	This node is used to capture views that fatness in a child is a function of genetics / heredity.
God’s design [<i>Kazi ya Mungu</i>]	This node is used to capture responses by participants that God is the one who creates fat children.
Good nutrition	This node is used to capture responses whereby participants mention good nutrition as the cause of child’s chubbiness
‘ <i>Maradhi</i> ’	This node is used to capture participants’ responses that too much fatness is caused by diseases.

Good health care	This node is used to capture views that fatness in a child is caused by good health care.
Perceptions about child's weight	This node is used to capture all ideas whereby participants express their knowledge, perceptions and beliefs about the weight of a child.
Attitude / perceptions on low weight	This node will be used to capture general opinions on how people perceive a child with low / poor weight
Causes of poor weight	This node will be used to capture issues mentioned by participants as the causes of poor weight / weight loss in a child.
Attitude / perceptions on heaviness of a child	This node will be used to capture general opinions on how people perceive a heavy child.
Determinants of good weight	This node will be used to capture general perceptions on what people think makes a child to have good weight.
Opinion and perceptions on contextual conditions underlying growth of young children.	This node is used to document all ideas about socio-cultural conditions that influence growth of young children in the community.
Mothers' responsibilities	This node is used to capture all what mothers of under-five children mentioned as their responsibilities in the family.
Fathers' responsibilities	This node is used to capture all what fathers of under-five children mention as their responsibilities in the family.
Mother responsibilities and child care	This node is used to capture mothers' views on how their involvements in daily responsibilities influence growth of their children.
Father responsibilities and child care	This node is used to capture father views on how their involvements in daily responsibilities influence growth of their children.
Support at home when busy	This node will capture information about the people who support mothers / primary caregivers taking care of under-five children when they are at home but busy. It will also include information about the type of support received.
Support when a child is ill.	This node will capture information about the people who support mothers / primary caregivers taking care of a child when s/he is ill. It will also include information about the type of support received.
Support when away from home for attending daily responsibilities	This node will capture information about the people who support mothers / primary caregivers taking care of under-five children when they are away from home for attending their daily responsibilities e.g., away for farm work. It will also include information about the type of support received.



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Father's support	This node includes all responses that detail roles that men play in providing care to their young children.
Older children's support	This node includes all responses where mothers mention their older children as important source of help in relation to child care.
Local leaders' support	This node includes all responses where mothers mention local leaders as important source of help in their efforts to provide good care to their children.
Community health workers' support	This node includes all responses where mothers mention their older children as important source of help in relation to their efforts to provide good care to their children.
Mother-in law' support	This node is used to capture caregivers' responses about the roles that their mother-in-law's play in enhancing their child care provision.
Neighbor's support	This node is used to capture caregivers' responses about the roles that their neighbors play in enhancing their child care provision.
Co-wife's support	This node is used to capture responses whereby caregivers mention their co-wives as one of people that help them in providing care to their children.
Grandmothers' roles	This node includes all what elderly women mention as their roles as grandmothers in enhancing their child care provision / child growth.
Why staying with grandchild	This node is used to capture expressions whereby elderly women mention the reasons that make young children to live with their grandparents.
Support to grandparents	This node is used to capture elder women's views / opinion about type and quality of supports they receive from the biological parents of grandchildren they stay with.
Challenges by grandparents	This node is used to document what elder women mention as challenges they face in providing care to their grandchildren under their guardianship. This also includes stories by grandparents about the moments that they wished to provide care to their grandchildren but they could not.
'Mitala'	This node will be used to capture ideas where participants consider polygamous marriage ("mitala") as one of the factors contributing to depletion of family earning and subject mothers and young children to poor care.
'Nyumba ndogo'	This node will be used to capture ideas where participants consider extramarital relationships by men as one of the factors contributing to depletion of family earning and subject mothers and young children to poor care.
Men's alcoholism	This node will be used to detail ideas and stories commenting that alcoholic behavior among men challenges parents' ability to provide good care to

	their children, and expose mothers' and children to violence.
Child neglect	This node will be used to capture all ideas / stories that mention child neglect by parents as one of the factors that challenge child's capability to receiving good care.
Men's denial of pregnancy	This node will be used to capture all responses and stories from participants indicating how men's refusal to take responsibility for pregnancy challenges mothers' ability to provide care to their children; and hinder child's ability to live with both parents with love and care.
Exposure to infections	This node is used to capture opinions that mention persistent illness / frequent infections particularly malaria as underlying factor for growth faltering among children in the study setting.
Health issues	This node will document common health / growth issues that face young children in the village.
Premature birth [<i>kuzaa njiti</i>]	This node will be used to document all responses that mention premature births as one of factors contributing to poor growth among young children.
Teenage / school pregnancy	This node will be used to capture all views / stories that portray school / teenage pregnancy as a conversion factor underlying poor care / poor growth among children in the village.
Home delivery	This node will document participants' expressions about home delivery and its perceived impacts to child growth
Partner's support	This node is used to capture views and experiences whereby participants mention partner's support as one of the factors underlying caregivers' ability to provide care to their children.
Lack of health facility	This node is used to capture responses /stories that mention the lack of health facility in the village as a factor that challenges caregivers & children's capability to utilize health care.
Distance to health facility	This node is used to capture responses / stories that mention the distance to health facilities as a factor that challenges caregivers & children's capability to utilize health care.
Road condition & lack of public transport	This node is used to capture responses / stories that mention poor road conditions and lack of public transport as factors that challenge caregivers & children's capability to utilize health care.
shortage of drugs	This node is used to capture responses that mention the shortage of drugs in public health facilities as a factor that challenges caregivers & children's capability to utilize health care.

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Health seeking behavior	This node is used to capture views whereby participants consider parents' poor health seeking behavior e.g., delayed treatment of child's illness etc. as a conversion factor underlying poor growth in children.
Women's farm work	This node documents responses whereby participants explain that mothers' involvement in farm work limits their capability to get time for caring for their children, deny children from their capability to be exclusively breastfeed; and their ability to rest and live in safe environment.
Power relations	This node documents responses whereby participants mention mothers' lack of control and decision making over the produce and the income obtained through the sales as one of conversion factors limiting their ability to provide good care to their children
Housing condition	This node is used to capture views and stories on how poor housing condition among majorities expose children to ill health / growth; and challenges their capability to live in a safe environment.
Divorce / separation	This node is used to capture responses whereby divorce / parents' separation is mentioned as one of factors that challenge quality of child care.
Birth position	This node is used to capture participants responses that referred to child's birth position / long awaited child as one of factors mediating quality of care provided to children
Weather condition	This node is used to capture participants' expressions on how the unpredictable weather change affects agricultural activities thus leads to food insecurity and limit parents' ability to provide quality care to their children.
Agricultural tools	This node is used to document participants responses mentioning poor agriculture including poor equipment and lack of capital as one of factors contributing to their poor harvest thus fail to get enough income to cater for children's needs.
Clash between farmers and cattle herders	This node is used to document all ideas on how land disputes between farmers and the Maasai pastoralists act as a central conversion factor that significantly challenges parents' capabilities to provide for their children.
Market forces	This node is used to capture views whereby participants express that unreliable markets and low price for their agricultural produce contribute to their poor ability to provide their children with adequate care important for their growth.

Feeding practices	This node is used to capture responses whereby participants mention poor feeding practices as a factor underlying poor growth among children.
Family size	This node is used to capture opinions that mention big family size (i.e., having many children) as a one of factors that challenge parents' ability to provide good care to their young children.
Poor Income	This node is used to capture responses whereby parents mention poor income as a factor challenging their capability to provide good care to their children.
Poor education	This node is used to capture opinions that mention poor education among parents as factor contributing to parents' lack of ability to earn and to provide care to their children.
Nutritional knowledge	This node is used to capture opinions that mention lack of nutritional knowledge among parents as a contributing factor to poor child care.
I wish I could (mothers)	This node will be used to document stories provided by mothers of under-fives about what they wish they could be or do to be able to promote healthy growth in their young children.
I wish I could (fathers)	This node will be used to document stories provided by mothers of under-fives about what they wish they could be or do to be able to promote healthy growth in their young children.
Perceptions / views about factors contributing to poor growth / growth faltering among young children	This node will be used to capture all responses from participants detailing their thoughts about perceived factors / reasons that make their children / young children in the community to have growth problems.
Diseases	This node is used to capture ideas by participants where they consider infections as one of the factors causing poor growth of children in the community.
<i>Lishe duni (poor nutrition)</i>	This node will be used to capture all ideas where participants mention inadequate nutrition as a factor contributing to poor growth among children in the community.
Environmental factors	This node will capture all ideas where participants mention environmental factors—e.g., mosquito favoring surroundings—as one of factors contributing to poor growth among children in the community.
<i>'Nyota ya kijani'</i>	This node is used to capture caregivers' beliefs that mother's use of modern contraceptives contributes growth problems in a child.



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<i>'Chanjo'</i>	This node is used to capture participants' beliefs that prenatal and child vaccinations cause growth problems to young children.
<i>'Upepo mbaya'</i>	This node is used to document responses whereby participants ascribe poor growth problems to evil spirits / witchcraft.
Sex while pregnant	This node is used to capture all ideas from participants where they explain that sexual intercourse while a woman is pregnant is dangerous to the health and growth of the unborn baby.
Eye-ear infection	This node will be used to capture all ideas from participants where they explain that during sexual intercourse, man's semen and sperms pour in mother's womb causes eye & ear infections to the unborn baby.
A man's white matters	This node is used to capture all ideas from participants where they explain that during postpartum sexual intercourse, man's semen and sperms pour in mother's womb are dirtying unborn baby's body.
<i>'Utosi'</i>	This node is used to capture expressions portraying participants' belief that during sexual intercourse, a push of a man's penis may deform the unborn baby's fontanel.
It is a huge shame	This node will be used to capture participants' expressions where participants explain that giving birth to a baby full of white matters (sperm/semen) on its body / a baby whose fontanel has some anomalies cause shame to the mother as it reflects the non-adherence to prenatal sex taboos.
We separate until when we give birth	This node will be used to capture expressions where women mention the separation from their partners during second and third trimester of pregnancy as a strategy to protect the unborn child from ill health / poor growth.
"Kubemenda"	This node is used to capture participants' statements indicating that ill health, poor growth and development in a child is caused through parental non-adherence to postpartum sexual abstinence, and or a new pregnancy while still breastfeeding.
<i>'Mchezo mchafu'</i>	This node will be used to capture participants' expressions that portrays sexual affair during breastfeeding period as a filthy game which indicates poor parental care.
<i>'Kukatikiza' / kumruka mtoto</i>	This node will be used to capture all ideas where participants' comment that the conception during lactation period causes ill health and poor growth to the breastfeeding baby.

Pregnancy heat	This node will be used to capture all ideas where participants comment that the body heat of a pregnant woman is harmful to the health and growth of a breastfeeding baby.
“She has sucked her fellow’s milk”	This node will be used to capture all ideas where participants comment that a pregnant mother’s breast milk is toxic to the breastfeeding baby as it is incompatible with his/her physiology.
Sexual intercourse during lactation	This node will be used to document ideas whereby participants consider sexual intercourse during breastfeeding period as a cause of poor growth to a child.
‘Manii / shahawa’	This node will be used to capture all ideas where participants comment that during sexual intercourse, a man’s semen and woman’s vaginal excretion pollute the breast milk which causes poor growth when sucked by a baby.
Man’s seeds	This node will be used to capture all ideas where participants comment that during sexual intercourse, a man’s sperms pollute the breast milk which eventually lead to poor growth when sucked by a baby.
‘Jasho’	This node will be used to capture all ideas where participants comment that the body sweat generated during sexual intercourse is harmful to the health and growth of a breastfeeding baby.
‘Janaba’	This node will be used to capture all ideas where participants comment that the body heat generated during sexual intercourse inflicts illness and poor growth to the breastfeeding baby.
An adulterer’s touch	This node will be used to capture participants’ beliefs that poor growth and illness to a child could happen when one of couples had extramarital sex and touch the breastfeeding baby before washing his/her body properly.
A dirty neighbor’s touch	This node is used to capture all ideas from participants where they explain that ill health and poor growth in a child can be caused by a touch of a neighbor who had sex but did not wash her body properly.
The menstruating woman’s touch	This node is used to capture all ideas from participants where they explain that ill health and poor growth in a child can be caused by a touch of a woman who is on her menstruation period.
‘We are told by elders’	This node is used to capture responses whereby participants depict elderly people, particularly grandmothers, as important source of knowledge regarding <i>kubemenda</i> and postpartum sexual abstinence

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Concequences / markers of <i>kubemenda</i>	This node will be used to capture all ideas where participants mention the perceived concequences indicating that child's poor growth is caused by the violation of postpartum sex taboos.
It resembles ' <i>Utapiamlo</i> '	This node will be used to capture responses whereby participants explain that a child with <i>kubemenda</i> resembles someone with malnutrition [<i>utapiamlo</i>], Kwashiorkor [<i>safura</i>], and stunting [<i>kudumaa</i>].
' <i>Mlezi</i> ' (the nurture).	This node will capture all ideas where participants portray a woman as the nurture of a child, thus she is expected completely adhere to pre / postnatal sexual abstinence.
' <i>Mwanamme halei</i> '	This node is used to capture all ideas whereby participants describe the positioning of men in the discourse of prolonged sexual abstinence after birth.
The extent of abstinence	This node will be used to capture all ideas where participants discuss the extent of sexual abstinence after birth.
The duration of abstinence	This node will be used to document all ideas where participants explain about the duration of postnatal abstinence.
Time of resuming sex	This node will be used to capture all ideas where participants talk about the proper time to resume sexual intercourse after birth.
Shame & stigma (in the community)	This node is used to capture all responses that explains the shame & stigma that mothers of poorly growing children, and children judged to have <i>kubmemenda</i> face in the community.
Whose shame?	This node will be used to document all ideas where participants comment on who is usually blamed / should be blamed by the community when a child shows signs indicative of <i>kubemenda</i> .
Shame & stigma (health care setting)	This node is used to capture all responses that describe shame and stigmatization mothers face during growth monitoring clinics / child care when their children are perceived to have symptoms indicative of <i>kubemenda</i> .
Health care providers as agents of schemas on <i>kubemenda</i>	This node will be used to capture participants' responses that depict health workers as the conveyors of schemas on the traditions of <i>kubemenda</i> to mothers during growth monitoring / childcare clinics.
Postnatal abstinence & child care	This node will capture all ideas where participants discuss how the discourse of postnatal abstinence mediates parents' ability to provide good care to their children
' <i>Kulea kizamani</i> '	This node will be used to capture all expressions whereby participants depict sexual abstinence after birth as an olden and / or outdated way of nurturing child growth

The liberator	This node will be used to capture all ideas where participants consider the availability of modern contraceptives as ‘the liberator’ of young parents from the norm of post-natal abstinence.
Modern Contraceptives: a challenge to the traditional discourse	This node will be used to capture all ideas where participants consider the availability of modern contraceptives as the key factor underlying violation of postpartum sex taboos among current parents.
Women’s conflicting roles and Men’s power.	This node is used to capture all views about how men exercise control over women’s sexuality in the discourse of postpartum sexual abstinence. It also includes statements on the struggles women face in fulfilling social expectations as mothers and wives during breastfeeding period.
Concerns	This node is used to capture responses whereby participants express their worries regarding the practice of postnatal abstinence to their health / family health.
Traditional practices for preventing poor child growth.	This node will capture all ideas where participants express the traditional practices used to prevent poor growth in children (including those created through sexual intercourse).
‘We don’t see our men after birth’	This node is used to capture all ideas where participants mention postnatal sexual abstinence as a cultural strategy they use to prevent poor growth among breastfeeding baby.
Sexual abstinence during 1 st and 2 nd trimester	This node is used to capture all ideas where participants mention sexual abstinence during 2 nd and 3 rd trimester of pregnancy as one of the traditional strategies they use to prevent poor growth to the unborn baby.
<i>‘Kamwa / Azama’</i>	This node will be used to document all ideas where participants mention that as soon as a baby is born, s/he is provided with a traditional protection known as kamwa/azama to prevent her/him from any growth problem including those caused by witch craft, by evil spirits, a touch of a person who had sex but did not wash her body properly, and a touch of menstruating woman other than a baby’s mother.
<i>‘Kuzindika’</i>	This node will capture all ideas whereby participants explain that they incorporate a traditional protection under their door threshold to avoid harms from bad people who come to visit the newborn.
<i>‘Kujiunga’</i>	This node is used to capture all ideas whereby participants mention modern family contraceptives as a common way used to avoid sexual risks to child growth during breastfeeding period.
Drain your milk	This node will be used to capture all ideas where participants comment that the draining and throw of

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	milk immediate after sex and before breastfeeding helps to prevent growth problems indicative of <i>kubemenda</i> .
' <i>Kuachisha</i> ' (<i>weaning</i>)	This node will be used to capture all ideas where participants mention abrupt weaning as a common way used to avoid sexual risks during breastfeeding period on child growth.
Immediate bath after sex	This node will be used to capture all ideas whereby participants consider an occasional sex coupled with immediate bath as one of the strategies to avoid <i>kubemenda</i> .
Temporary separation	This node will capture all ideas where participants mention that couples are supposed to sleep separately as soon as the baby is born so as to avoid sexual temptations.
Views / opinions on the actions taken to remedy the growth of a child considered to have <i>kubemenda</i>	This node will capture all ideas where participants describe the actions taken when they notice that a child portrays perceived signs of <i>kubemenda</i>.
Take her to the GM clinic	This node is used to capture all ideas where participants mention visiting hospitals / GM clinics as one of the actions taken to remedy the growth of the baby when noted with the perceived signs of <i>kubemenda</i> .
' <i>Lishe</i> ' / ' <i>chakula bora</i> '	This node will be used to capture all ideas whereby participants mention good nutrition as one of the strategies to rectify poor growth caused though <i>kubemenda</i> .
Traditional remedies	This node will be used to document all ideas where participants comment that when a child is noted with signs of <i>kubemenda</i> s/he is treated using traditional medicines (either by consulting traditional healers or (older) people who have proper knowledge.
Taken to grandmothers	This node will be used to document all ideas from participants where they mention that a child is taken to stay with her/his grandmother recover from <i>kubemenda</i> .
Sweeping child's legs	This node will be used to capture all ideas where participants comment that when a child fail to walk on schedule, they sweep her/his legs with a used groom to rectify her growth.
Views about the support parents need to promote their children growth	This node is used to document participants' explanations about support they need from partners, family, community, environment, health workers, policy makers to make their children grow well
Support from a husband	This node is used to capture all ideas about what mothers mentioned as the support they need from

	their husbands/partners to make their children grow well.
Support from a wife	This node is used to capture all ideas about what fathers mentioned as the support they need from their wives/partners to make their children grow well.
Support from the family	This node is used to capture all ideas about what caregivers mentioned as the support they need from the family to make their children grow well
Support from the community	This node is used to capture all ideas about what caregivers mentioned as the support they need from the community to make their children grow well
Support from the environment	This node is used to capture all ideas about what caregivers mentioned as the support they need from the environment to make their children grow well
Support from health workers	This node is used to capture all ideas about what caregivers mentioned as the support they need from the health workers to make their children grow well.
Support from the government / policy makers	This node is used to capture all ideas about what caregivers mentioned as the support they need from the policy makers / government to make their children grow well
Hygiene and sanitation	This is used to document views that portray the reality about hygiene and sanitation in the study setting
Source of water for domestic use	This node is used to capture what participants mentioned as sources from which they get water for domestic use.
Preparation	This node is used to document the ideas about the ways in which participants prepare water for drinking in their families, and reasons behind not treating water for drinking
Child feces disposal	This node is used to capture all ideas whereby participants explain their handling of child's feces.
Place for hand-washing	This node is used to capture all ideas whereby participants explain places and ways they wash their hands after attending child's feces and before eating
Availability and use of toilet	This node is used to capture participants' explanations about availability, condition and usage of toilets their homes.
'We go to the bushes'	This node will be used to capture participants views where they mention that they use bushes / fields for open defecation
Views on child feeding practices	This node documents all ideas about child feeding behavior practiced by caregivers
Eating behavior during pregnancy	This node is used to document all ideas about mother's life style and food taboos during pregnancy
Knowledge on breastfeeding	This node includes responses about participants' knowledge on ideal (1) timing of introduction of

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	breastfeeding (2) duration of exclusive breastfeeding and (3) timing for ceasing to breastfeed.
Weaning time	This node includes responses about the time when mothers introduce complementary food to their infants.
Weaning food	This node includes information about types of foodstuffs that caregivers commonly provide to their children during weaning period and the frequency of child feeding to different categories of under-five children.
Early & abrupt weaning	This node includes all reasons that force mothers to introduce complementary food to their infants before 6 months old; and to stop breastfeeding their babies before 2 years.
Eating arrangements	This node is used to document expressions about eating arrangements of under-five children within families. This includes age when a child starts to eat with adults and whether children and adults eat together in one bowl.
Food preparation and storage	This node is used to capture the ways in which caregivers in the community prepare and store food for under-five children.
HIV and breastfeeding	This node is used to document caregivers' knowledge regarding the recommendations of breastfeeding when a mother is HIV positive
Experience with growth monitoring (GM) services	This node documents participants views and experience with growth monitoring activities that are taking place in their community.
Place & frequency	This node is used to capture responses about the place where routine growth monitoring services are offered, how often it is provided.
GM activities / services	This node details views about the service provided during GM clinics and things checked for by health workers when assessing growth of children.
Importance of GM practice	This node captures responses indicating participants' views about the importance of routine growth monitoring practice.
Feedback & reaction	This node is used to capture responses by mothers where they explain about the feedback they receive from health workers on weight of their children (improving / not improving); as well as their reaction on the feedback.
Cause of weight loss	This node details mothers' explanations about the cause of weight loss identified in their children during the recent visit to GM clinic
Interventions	This node will be used to capture expressions about actions taken and advices provided by health workers to mothers when identifying poor growth during growth monitoring clinic.

Actions to improve weight	This node is used to capture ideas about actions taken by caregivers to promote child growth after receiving a feedback on poor weight of their children.
GM challenges	This node is used to capture community health workers' views regarding the challenges they face in providing growth monitoring services in the village.
Comprehension of growth chart	This node is used to document the expressions whereby participants comment on their understanding of the message in their children's growth chart.
Weight as a sole indicator of growth	This node is used to document participants' opinion on the use of 'weight' as the main / only indicator in assessing growth of their children.
Other dimensions	This node is used to capture what participants suggest as other issues / indicators that they would wish to be considered in assessing growth of young children in addition to weight.
Quality of GM services	This node is used to capture caregivers' opinion on the quality of GM services offered in their community. This includes, but not limited to health workers behavior / attitudes, waiting time, service procedures, and environment where the service is provided.
Poor attendance to GM clinics	This node is used to capture ideas about the reasons that deter mothers from taking their children to the GM clinic / make them abandon the clinics.
Growth assessment in the past	This node captures elder women's narratives on the ways growth of a child was assessed in the past.
Existing health Interventions	This node is used to capture ideas about past and current health interventions implemented in the study setting.



Summary /Samenvatting

Summary

Ethnography of Child Growth in Tanzania

Introduction

In the biomedical model, child growth is defined as the changes in the child's weight, height, and head circumference over a given period of time (UNICEF, 2013). This definition does not take into account the multidimensionality of child growth beyond physical growth and the importance of context. Children and their caregivers lead their lives in a variety of socio-cultural contexts that: (i) frame the local conceptualizations of what constitutes normal or poor child growth and development and inform caregivers' childrearing practices; and (ii) influence the caregivers' capabilities for achieving healthy child growth. The context underlying child growth has been given little attention in growth monitoring practices, even though the anthropometric indicators only represent the physical dimensions that guide the assessment of child growth and the development of relevant interventions. In this study, we set out to explore and to better understand local conceptualizations of child growth by examining the socio-cultural context of child growth in Tanzania, with a specific focus on under-five children. Two broad questions were addressed. The first research question was: "How does the socio-cultural context inform parents' framing of and practices around child growth?" The second research question was: "What are the contextual factors underlying capabilities for healthy child growth?" In this study, we applied an emic approach based on multiple ethnographic methods. Over the course of our conversations with caregivers of under-five children, research themes that had not been identified prior to the data collection emerged. Moreover, through our ethnographic approach, we were able to give voice to caregivers in the community in seeking to define what child growth entails, which allowed us to capture additional dimensions of child growth that are relevant to growth monitoring practices. Several research questions followed from the overall objective of this study:

1. How do community members conceptualize healthy child growth? What local markers do caregivers use to recognize the healthy growth of young children? (Chapter 4)
2. What conceptualizations and meanings do community members attach to childhood height and short stature? (Chapter 5)
3. How do the social context and cultural schemas shape community members' beliefs regarding the etiology of growth faltering and child care practices? (Chapter 6)
4. What are the maternal capabilities for supporting healthy child growth? (Chapter 7)

Theoretical framework

The value that this study brings to research on child growth lies in our integration of two theories – i.e., the cultural schemas theory (CS) and the capability approach (CA), which originate from different fields and disciplines – to uncover the



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multidimensionality of child growth. In this study, the CS theory and the CA formed the basis of the theoretical model that we used in framing our research approach, and in interpreting our findings. For example, the cultural schemas theory by D'Andrade guided our understanding of how the socio-cultural context informed parents' conceptualizations of and practices around healthy/poor child growth (research questions 1, 2, and 3). Moreover, the capability approach facilitated the identification of parents' (maternal) capabilities that contributed to the achieved functioning of having healthy growth in childhood; how each of the identified capabilities were influenced by both contextual and individual factors; and how, in turn, these capabilities shaped the functioning of achieving healthy child growth (research question 4). Concepts derived from the two theories – i.e., conversion factors drawn from the cultural schemas theory and capabilities and agency drawn from the capability approach – were used in the study design and the data collection tools, and guided the data analysis. Through the combined application of these two theories, the study was able to generate rich, in-depth data that enhanced our understanding of the multidimensionality of child growth in the context of Tanzania.

Study site

The ethnography was conducted in Malangali village, in the Kilosa district of the Morogoro region of Tanzania. Morogoro region is considered one of Tanzania's "food baskets" – i.e., high food-producing regions – but has a relatively high prevalence of stunting (33%) among under-five children (TDHS-MIS, 2016). The rural location of Kilosa District, which has a high prevalence of infant malnutrition and anemia in a context of plenty, makes it an appealing choice for examining the capabilities that contribute to healthy child growth. Malangali village was chosen as the study setting based on the availability of child growth monitoring services in the village, and on the village's rural location, which typifies the general context of Kilosa district.

Study design, data collection, and analysis

The study employed an ethnographic approach to examine the socio-cultural dimensions and contexts of child growth. This approach enabled us to gather in-depth knowledge that is "emic" in nature, which conforms to our objective of understanding child growth in its context. Through giving voice to the local people in defining what child growth entails, the study was able to uncover additional dimensions of child growth that go beyond those that are included in the current growth monitoring practices. The data were collected in two cycles. First, we conducted a household census, observations, and focus group discussion (FGDs), followed by in-depth interviews (IDI) and key informant interviews (KII) with caregivers of under-five children in Southeastern Tanzania. The data collection circle used in this study improved the richness of the findings, allowed for the emergence of inductive knowledge, and informed subsequent interviews. The participant observations and the household census were designed to gather information on what was happening in the community, and insights into the environmental, social, cultural, and economic contexts in which the parents/caregivers and their children were living. In addition, the observations allowed us to ascertain the actual behavior around child growth practices, which was useful in cross-checking the normative behavior reported through conversations. A total of 19 FGDs and 30 IDIs were collected with (1) mothers and fathers who had under-five children, regardless of their nutritional status; and (2) women aged 45 years and older (see Table 2 and 4). The FGDs were designed to collect information about a broad range of opinions and perceptions regarding how child growth was conceptualized in the community, and about the circumstances underlying

the abilities of caregivers to promote the healthy growth of under-five children. Building upon the themes that emerged from the FGDs, the aim of the IDIs was to explore in-depth the caregivers' personal views on and experiences of healthy/poor child growth, as well as the meanings they attached to child growth. In addition, the IDIs collected information about the ways in which caregivers had been tracking growth in their individual children. A total of five KIIs were conducted with community health workers (CHWs) and traditional birth attendants. Conducting the IDIs and the KIIs after the FGDs allowed the researchers to validate the information generated through the FGDs, and to address gaps identified in the data collected through the FGDs. Our analysis took place at two levels. At the first level, the inductive and deductive codes were developed. At the second level, the patterns and relationships between the categories were identified; and, as described in Hennink, Hutter, & Bailey (2011), the main themes that reflected the socio-cultural contexts of child growth were synthesized. Some themes represented new concepts that emerged inductively from the data, while other themes reflected the theoretical components that informed the data collection topic guides. NVivo 11 software (QSR International Pty Ltd, Australia) was used to facilitate the data analysis.

Key findings

Cultural markers for identifying health child growth: Chapter 4 presents the findings detailing how community members conceptualized healthy child growth, and the meanings they attached to the cultural markers they reported using to identify healthy child growth (*research question 1*). The results indicate that the caregivers in this study used multiple gauges and specific markers to recognize healthy growth in a child, with chubbiness, being free from illness, and having good eating habits emerging as the most commonly mentioned cultural markers that a child was growing well. The participants also integrated some biomedical concepts into their local knowledge and practices related to healthy growth. For instance, in line with the biomedical model, they reported paying attention to their child's body weight, as they seemed to believe that being heavier (having good *kilos*) connoted good growth and good care by the parents. They appeared to be aware of biomedical signs used to assess weight of a child, including the colors of the bands in the child's growth chart. However, poor comprehension of the grading of the colors in the growth chart also seemed to be common among the caregivers. For example, several of the participants said that they interpreted a child's weight being above the green band as indicating that s/he was underweight, whereas it actually meant that the child was above the 75th percentile for weight. Although a few participants pointed to the height of the child in their conceptualization of healthy growth, the majority of them said they believed that height was not usually the deciding factor in how the child was growing. While the study community's cultural model and biomedical construction of child growth were observed to exist alongside each other, the meanings they attached to these biomedical concepts were shown to be culturally bound. For instance, whether a child had a poor or a good weight was ascribed to the nature of the child's bones and the parents' adherence to postpartum sex taboos.

Cultural perception of height in relation to growth: Chapter 5 provides an account of the findings on how the community members – and caregivers of under-five children in particular – conceptualized and perceived childhood height and short stature in relation to growth (*research question 2*). The study findings presented in Chapter 4 indicate that height was seldom referred to by participants as a marker of healthy growth. This inductively necessitated a need to explore the meanings that

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caregivers attached to childhood height and “short stature” – a specific aspect of poor growth – in relation to the growth of a child. Although caregivers integrated some biomedical concepts into their local models and practices, the meanings they attached to height, short stature, and stunting in children were primarily embedded in their cultural templates. Many believed that a child’s height was unrelated to his/her nutrition, health, or overall growth; and that short stature (*ufupi*) was a normal condition – a function of God’s will and/or heredity – that caregivers could not influence. Although *ufupi* was seen as an important indicator that a child was stunted, the caregivers said they did not view it as an independent marker of stunting. A number of cultural markers of stunting beyond height were mentioned, such as a mature-looking face, wrinkled skin, immature skin for the child’s age, weak or copper-colored hair, abnormal thinness, a swollen belly, swollen cheeks, delayed inability to crawl/stand/walk on schedule, stunted IQ, and frequent illness (see Table 6). If these signs were not present, a child could not be regarded as stunted based on *ufupi* only. Since culturally stunting was broadly conceptualized beyond height, a seemingly short child could be considered healthy if s/he had cultural markers of healthy growth, including chubbiness and a heavy weight. When the cultural meaning system could not help the participants in assigning meaning to the symptoms of poor growth, it was associated with witchcraft or evil spirits. Thus, in such cases, traditional healers were consulted.

Cultural etiology of growth faltering: Chapter 6 presents results on how the underlying socio-cultural contexts and schemas shaped community members’ beliefs regarding the etiology of growth faltering, and informed their child care practices for promoting healthy growth (*research question 3*). The findings of this study showed that the caregivers’ socio-cultural framework shaped their framing of and beliefs around poor child growth. Our ethnographic study inductively identified the concept of *kubemenda* – i.e., causing child growth to falter by violating the postpartum sex taboos – as the dominant cultural explanation for poor child growth in the study community. Although the caregivers in the study setting believed in a variety of causes of poor child growth, including illness, inadequate nutrition, and witchcraft; they also believed that the leading cause of poor growth and development in a child, including different forms of malnutrition, was the parents’ failure to maintain sexual abstinence during the postpartum period, especially if the mother conceived while still lactating. In the traditional discourse, the biomedical symptoms of child malnutrition and poor health (see Table 7) were culturally ascribed to the parents’ failure to follow postpartum sexual abstinence rules, or to the mother continuing to breastfeed during pregnancy. As it was widely believed that these symptoms in children indicated parental misbehavior, the stigma the parents would face often caused them to delay seeking health care from health professionals who may have shared these cultural beliefs.

Thus, sexual abstinence was found to be a dominant traditional practice that had been adopted not only by the community (elders), but also by the community health workers. If sexual abstinence was not maintained or if the mother conceived while still lactating, she would often wean her infant abruptly and completely to prevent poor growth. If a child showed signs of poor growth ascribed to *kubemenda*, the child’s caregivers used multiple pathways for obtaining care, with traditional care emerging as the most common curative strategy.

Maternal capabilities for healthy child growth: Chapter 7 presents our findings regarding maternal capabilities for healthy child growth (*research question 4*).

Through the use of the Capability Framework for Child Growth (CFCG) – a framework that advocates for understanding child growth by focusing not just on physical growth, but on the child’s socio-cultural context – we examined maternal capabilities for healthy child growth (*Chapter 7, research question 4*). The analysis uncovered three maternal capabilities that were important for achieving healthy child growth: (1) being able to feed; (2) being able to control and make decisions about farm products and income; and (3) being able to access medical care. Inadequate infant and child (breast) feeding were prevalent in the study setting. A mother’s capability to feed her children was often undermined because she was overburdened by farm and domestic work, lacked sufficient financial support from her spouse, and lacked support in providing direct care to her young children. Additionally, a woman’s control of farm produce and of decision-making regarding household purchases was often negatively affected by restrictive cultural norms, which gave more power to men than to women. Mothers frequently noted that they did not have the power make decisions making power on their expenditure of the family income, and that they often lacked the funds needed to buy nutritious food, to pay for transport to take their children to the hospital when they were ill, and to cover medical costs. As a conversion factor, a mother’s social network played a vital role in facilitating her ability to feed her children while she was away doing farm work, and in ensuring that she had access to medical care for herself and her children.

Conclusion

This ethnographic study has provided important insights into the conceptualization of child growth in the context of rural Tanzania, and thus contributes to the discussion about what constitutes optimal or poor growth around the globe. Such information is vital for policy-makers, public health programmers, and stakeholders concerned with promoting healthy growth among under-five children. Specifically, the study has illuminated (1) the cultural framing and practices around child growth, and (2) the contexts that (dis)empower mothers to promote the healthy growth of their under-five children in their daily lives. Our key findings reveal that healthy child growth is perceived in the community as a multidimensional phenomenon, as it includes multiple markers beyond the physical dimension that are culturally bound. Such multidimensional child growth is shaped by the practical opportunities that mothers have in converting available resources – including food – into the healthy growth of their young children. Based on the main findings of our study, we can conclude that the reality of child growth is complex, and that an evaluation of how children grow should reflect that complexity, and include contextual information that encompasses cultural markers, as well as anthropometric assessments.

Policy implications for Tanzania and beyond

The study findings call for a paradigm shift in Child Growth Monitoring (CGM) to a multi-dimensional approach that also includes the contextual information on an individual child and her/his caregivers. Specifically, the findings accentuate the need for: (1) counseling messages to be aligned with the context, and, thus, to include multidimensional indicators, i.e., markers that are culturally bound and indicators at the parental/household level; (2) a comprehensive approach that takes into account the cultural meanings that caregivers assign to the growth of their children when formulating policies, strategies, and guidelines, and when developing and implementing interventions aimed at promoting IYCF and healthy child growth and development; and (3) adding the concept of mother’s agency to current international frameworks of child nutrition.



Samenvatting

Etnografie van groei van kinderen in Tanzania

Inleiding

In het biomedische model wordt groei van kinderen gedefinieerd als de verandering in gewicht, lengte en hoofdomtrek gedurende een bepaalde periode, (UNICEF, 2013). In deze definitie wordt geen rekening gehouden met het feit dat groei van kinderen meer behelst dan alleen lichamelijke groei en ook het belang van context wordt niet meegenomen. Het leven van kinderen en hun verzorgers speelt zich af onder verschillende sociaal-culturele omstandigheden die: (i) bepalend zijn voor hoe normale en achterblijvende groei en ontwikkeling van kinderen wordt geconceptualiseerd en die (ii) invloed hebben op de mogelijkheden van ouders/verzorgers om bij kinderen een gezonde groei te bewerkstelligen. Tot nu toe werd er bij het monitoren van groei weinig aandacht besteed aan de omgeving waarin kinderen opgroeien en de antropometrische indicatoren geven slechts de fysieke aspecten weer. Deze indicatoren dienen als leidraad om te bepalen of het kind groeit volgens een bepaalde standaard en voor de ontwikkeling van geschikte interventies. In dit onderzoek willen we meer inzicht krijgen in lokale opvattingen met betrekking tot de groei van kinderen door de sociaal-culturele context van de groei van kinderen in Tanzania te bestuderen, met speciale aandacht voor kinderen tot vijf jaar. Twee algemene vragen zijn hierbij onder de loep genomen. De eerste onderzoeksvraag was: 'Welke invloed heeft de sociaal-culturele context op de manier waarop ouders denken over en zich gedragen ten aanzien van de groei van kinderen?' De tweede onderzoeksvraag was: 'Welke omgevingsfactoren zijn bepalend voor de keuzemogelijkheden van ouders om bij kinderen een gezonde groei te bewerkstelligen?' In dit onderzoek hebben we gekozen voor een op verschillende etnografische methoden gebaseerde 'emische'⁴ benadering. Tijdens onze gesprekken met ouders/ verzorgers kwamen er bovendien nieuwe onderzoeksthema's naar voren die nog niet onder de twee bovengenoemde onderzoeksvragen vielen. Door onze etnografische aanpak konden we aanvullende aspecten van groei van kinderen vaststellen die van belang kunnen zijn voor het monitoren daarvan. Uit de algemene doelstelling van dit onderzoek volgden verschillende onderzoeksvragen:

Welk beeld hebben leden van de gemeenschap van een gezonde groei van kinderen? Aan de hand van welke lokale indicatoren stellen verzorgers vast dat er sprake is van een gezonde groei van jonge kinderen? (Hoofdstuk 4)

Welke opvattingen en betekenis kennen leden van de gemeenschap toe aan een klein postuur? (Hoofdstuk 5)

Hoe bepalend zijn de sociale context en culturele schema's voor de overtuigingen van leden van de gemeenschap met betrekking tot de etiologie van groeiachterstand en de zorg voor kinderen? (Hoofdstuk 6)

Welke mogelijkheden hebben moeders om een gezonde groei van kinderen te bevorderen? (Hoofdstuk 7)

Theoretisch kader

⁴ emisch betekent "van binnenuit", hierin ligt de nadruk op de subjectieve betekenisgeving van mensen aan hun ervaringen (Hennink, Hutter & Bailey, 2011)

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Deze studie draagt bij aan de bestaande literatuur op het gebied van groei van kinderen, o.a. omdat we twee theorieën combineren – de culturele-schematheorie (CS) en de ‘capability approach’ (CA), elk afkomstig uit verschillende vakgebieden en disciplines – om zo het multi-dimensionele karakter van groei van kinderen bloot te leggen. De CS-theorie en de CA vormden in het onderzoek de basis voor het theoretische model waarmee we onze onderzoeksaanpak hebben afgebakend en waarmee we onze bevindingen hebben geïnterpreteerd. De culturele-schematheorie van D’Andrade gaf ons bijvoorbeeld inzicht in de invloed van de sociaal-culturele situatie op hoe ouders aankijken tegen en zich gedragen ten aanzien van een gezonde groei of groeiachterstand bij kinderen (onderzoeksvragen 1, 2, en 3). De ‘capability approach’ hielp ons in kaart te brengen welke mogelijkheden van ouders (moeders) bijdroegen aan het bewerkstelligen van een gezonde groei van hun kinderen, hoe de in kaart gebrachte keuzemogelijkheden elk werden beïnvloed door zowel contextgebonden als op zichzelf staande factoren, en hoe deze mogelijkheden, op hun beurt, weer bepalend waren voor het daadwerkelijk bewerkstelligen van een gezonde groei van kinderen (onderzoeksvraag 4). Concepten uit beide theorieën – "conversiefactoren" uit data gegenereerd op basis van de culturele-schematheorie en "keuzemogelijkheden" en "zeggenschap" uit de ‘capability approach’ – zijn gebruikt bij de onderzoeksopzet en het verzamelen van data, en vormden de leidraad voor de data-analyse. Door deze twee theorieën te combineren, konden met het onderzoek waardevolle, diepgaande data worden gegenereerd die meer inzicht bieden in het multi-dimensionele karakter van groei van kinderen in de Tanzaniaanse context.

Onderzoekslocatie

De etnografie is uitgevoerd in het dorp Malangali, in het district Kilosa in de regio Morogoro in Tanzania. Morogoro wordt beschouwd als een van de ‘voorraadschuren’ van Tanzania - regio's met een hoge voedselproductie - maar kent een relatief hoge prevalentie van kleine lichaamslengte (33%) bij kinderen tot vijf jaar (TDHS-MIS, 2016). Het landelijke district Kilosa, waar, in een situatie van overvloed, toch sprake is van een hoge prevalentie van ondervoeding en bloedarmoede bij zuigelingen, is aantrekkelijk om onderzoek te doen naar de mogelijkheden die bijdragen aan een gezonde groei van kinderen. Als onderzoekslocatie is gekozen voor het dorp Malangali omdat er medische posten aanwezig zijn waar groei van kinderen bijgehouden wordt en vanwege de rurale ligging van het dorp, waardoor het representatief is voor de algemene situatie in het district Kilosa.

Onderzoeksopzet, dataverzameling en -analyse

Voor het bestuderen van de sociaal-culturele aspecten en de omgevingsfactoren voor groei van kinderen hebben we in dit onderzoek gekozen voor een etnografische aanpak. Dat gaf ons de mogelijkheid diepgaande kennis te vergaren vanuit een "emisch" perspectief, wat aansluit bij onze doelstelling de groei van kinderen te begrijpen in zijn context. Door een stem te geven aan de lokale bevolking bij het conceptualiseren van groei van kinderen, konden we met het onderzoek aanvullende aspecten van groei blootleggen die verder reiken dan die, welke in de huidige groeiconroles worden opgenomen. De data zijn in twee cycli verzameld. We begonnen met het doen van een census onder huishoudens, met daarnaast observaties en focusgroep discussies, gevolgd door diepte-interviews met ouders en verzorgers van kinderen tot vijf jaar in Zuidoost-Tanzania en daarnaast vraaggelichte gesprekken met sleutelfiguren. Deze sequentie van dataverzameling zorgde voor waardevolle bevindingen, leverde inductieve kennis op en droeg input aan voor latere vraaggelichte gesprekken. De participerende observaties en de census waren bedoeld voor het

verzamelen van informatie over wat er in de gemeenschap gebeurde en om inzicht te verkrijgen in de omgevings-, sociale, culturele en economische omstandigheden waarin de ouders/verzorgers en hun kinderen leefden. Door middel van de observaties konden we bovendien nagaan hoe men zich werkelijk gedroeg ten aanzien van groei van kinderen. Dat was nuttig om de bevindingen te confirmeren ten aanzien van het normatieve gedrag dat in de gesprekken werd aangevoerd. In totaal hebben er negentien focusgroep discussies plaatsgevonden en zijn dertig diepte-interviews gehouden met (1) moeders en vaders van kinderen tot vijf jaar, ongeacht hun voedingsstatus, en (2) vrouwen van 45 jaar en ouder (zie Tabel 2 & 4). De focusgroep discussies waren bedoeld om informatie te vergaren over uiteenlopende meningen en percepties met betrekking tot de conceptualisering van groei van kinderen in deze gemeenschap, en over de omstandigheden die ten grondslag lagen aan de mogelijkheden van verzorgers om een gezonde groei bij kinderen tot vijf jaar te bevorderen. Met het doel voort te bouwen op de thema's die naar voren kwamen in de focusgroep discussies, gingen de diepte-interviews dieper in op de persoonlijke visie van verzorgers op en hun ervaringen met een gezonde groei dan wel groeiachterstand bij kinderen, en de betekenis die ze toekenden aan groei. Tijdens de diepte-interviews werd ook informatie verzameld over de manieren waarop verzorgers de groei van hun kinderen hadden bijgehouden. Er hebben in totaal vijf vraaggesprekken plaatsgevonden met lokale sleutelfiguren, namelijk lokale zorgverleners en traditionele vroedvrouwen. Door de diepte-interviews en vraaggesprekken met deze informanten te laten plaatsvinden na de paneldiscussies, konden de onderzoekers de informatie die uit de paneldiscussies naar voren was gekomen, valideren en konden ze lacunes in die informatie aanvullen. Onze analyse vond op twee niveaus plaats. Op het eerste niveau werden de inductieve en deductieve codes ontwikkeld. Op het tweede niveau werden de patronen en verbanden tussen de categorieën blootgelegd en werden, zoals beschreven in Hennink, Hutter, & Bailey (2011), de hoofdthema's gesynthetiseerd die de sociaal-culturele achtergronden van de groei bij kinderen weergaven. Sommige thema's stonden voor nieuwe concepten die op inductieve wijze uit de gegevens waren afgeleid, andere thema's weerspiegelden de theoretische componenten die ten grondslag lagen aan de topic guide voor de dataverzameling. Voor de data-analyse is gebruikgemaakt van NVivo 11 software (QSR International Pty Ltd, Australia).

Belangrijkste bevindingen

Culturele indicatoren van gezonde groei bij kinderen In hoofdstuk 4 vindt u de bevindingen waaruit blijkt hoe leden van de gemeenschap gezonde groei van kinderen conceptualiseerden en welke betekenis ze toekenden aan de culturele indicatoren waarmee ze naar eigen zeggen vaststelden of er sprake was van een gezonde groei (*onderzoeksvraag 1*). De resultaten tonen aan dat de verzorgers in dit onderzoek gebruikmaakten van meerdere meetinstrumenten en specifieke indicatoren om vast te stellen of er sprake was van een gezonde groei, waarbij een mollige lichaamsbouw, afwezigheid van ziekte en goede eetgewoonten het vaakst genoemd werden als culturele indicatoren voor een gezonde groei. De deelnemers integreerden ook een aantal biomedische concepten in hun lokale kennis en praktijken met betrekking tot een gezonde groei. Zo verklaarden ze, in aansluiting op het biomedische model, dat ze letten op het lichaamsgewicht van hun kind, omdat ze kennelijk dachten dat zwaarder zijn (genoeg *kilo's* wegen) impliceerde dat het kind goed groeide en goed door de ouders werd verzorgd. Ze bleken op de hoogte te zijn van biomedische aanwijzingen waarmee het gewicht van een kind werd beoordeeld, zoals de kleur van de banden in de groeitabel voor het kind. Maar de meeste verzorgers leken slecht op de hoogte te

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zijn van de kleurindeling in de groeitabel. Zo zeiden meerdere deelnemers dat ze dachten dat het kind te licht was als het gewicht boven de groene band uitkwam, terwijl dat in werkelijkheid betekende dat het gewicht van het kind boven het 75e percentiel viel. Een paar deelnemers wezen de lengte van het kind aan als aanwijzing voor een gezond gewicht, maar de meesten van hen dachten dat lichaamslengte meestal niet doorslaggevend was voor hoe een kind groeide. Het culturele model en de biomedische interpretatie van de groei van kinderen bleken in de onderzoeksgemeenschap naast elkaar te bestaan, maar de betekenis die aan biomedische concepten werden verbonden, bleek cultureel bepaald te zijn. De vraag of een kind een goed of te laag gewicht had, werd bijvoorbeeld in verband gebracht met de botten van het kind en de mate waarin de ouders zich hielden aan een taboe op seks na de geboorte.

Culturele perceptie van lichaamslengte als een indicator van groei in hoofdstuk 5 vindt u een overzicht van de bevindingen met betrekking tot de opvattingen en percepties ten aanzien van kleine lichaamslengte van kinderen in de gemeenschap - in het bijzonder opvattingen van verzorgers van kinderen tot vijf jaar - (*onderzoeksvraag 2*). De onderzoeksbevindingen die in hoofdstuk 4 worden gepresenteerd, tonen aan dat lichaamslengte door deelnemers zelden werd genoemd als indicator voor een gezonde groei. Dit maakte het noodzakelijk te onderzoeken welke betekenis verzorgers toekenden aan kleine lichaamslengte van kinderen - een specifiek aspect van groeiachterstand - in relatie tot de groei van een kind. Verzorgers integreerden weliswaar enkele biomedische concepten in hun lokale modellen en praktijken, maar de betekenis die ze toekenden aan kleine lengte en groeiachterstand bij kinderen waren in de eerste plaats toch verankerd in hun culturele normen. Velen zagen geen verband tussen de lengte van een kind en zijn/haar voeding, gezondheid of algehele groei, en zagen een klein postuur (*ufupi*) als iets normaal - Gods wil en/of overerving - waarop de verzorgers geen invloed hadden. Hoewel *ufupi* werd gezien als een belangrijke aanwijzing voor achterstand in lengtegroei, was dit volgens de verzorgers geen opzichzelfstaande indicator van groeiachterstand. Naast lichaamslengte werden nog een paar culturele indicatoren van groeiachterstand genoemd, zoals een oud lijkend gezicht, een rimpelige huid, een onrijpe huid die niet past bij de leeftijd van het kind, slap of rossig haar, abnormale dunheid, een gezwollen buik, gezwollen wangen, achterlopen wat betreft kruipen/staan/lopen, een IQ-achterstand en vaak ziek zijn (*zie Tabel 6*). Als deze symptomen ontbraken, was *ufupi* alleen niet genoeg om te concluderen dat het kind belemmerd was in groei. Omdat culturele groeiachterstand werd opgevat als meer dan alleen achterblijven in lichaamslengte, kon een ogenschijnlijk klein kind toch worden beschouwd als gezond als het adequate uitkomsten van cultureel bepaalde indicatoren voor een gezonde groei vertoonde, zoals een mollige lichaamsbouw en een gezond gewicht. Als de deelnemers er niet in slaagden de symptomen van groeiachterstand te verklaren vanuit het systeem van culturele betekenissen, dan werd die groeiachterstand in verband gebracht met hekserij of kwade geesten. Er werden dan traditionele helers geraadpleegd.

Culturele etiologie van groeiachterstand: in hoofdstuk 6 vindt u de resultaten van onderzoek naar hoe bepalend sociaal-culturele achtergronden en schema's waren voor het ontstaan van overtuigingen met betrekking tot de etiologie van groeiachterstand in deze gemeenschap, en hoe die van invloed waren op de manier waarop ouders/ verzorgers voor hun kinderen zorgden om een gezonde groei te bevorderen (*onderzoeksvraag 3*). Uit de bevindingen van dit onderzoek is gebleken dat het sociaal-culturele kader van de verzorgers bepalend was voor hun opvattingen en overtuigingen ten aanzien van een groeiachterstand bij kinderen. In ons

etnografisch onderzoek kwam het begrip *kubemenda* - groeiachterstand bij kinderen als gevolg van het overtreden van een taboe op seks na de geboorte – naar voren als dominante culturele verklaring voor groeiachterstand bij kinderen in de onderzoeksgemeenschap. Hoewel de verzorgers in de onderzoeksopzet erkenden dat groeiachterstand allerlei oorzaken kon hebben, zoals ziekte, ondervoeding en hekserij, dachten ze dat de belangrijkste oorzaak van een groei- en ontwikkelingsachterstand bij een kind, met inbegrip van verschillende soorten van ondervoeding, gezocht moest worden in het feit dat de ouders in de periode na de geboorte geen seksuele onthouding hadden betracht, met name als de moeder zwanger raakte terwijl ze nog borstvoeding gaf. In het traditionele denken werden de biomedische symptomen van ondervoeding en een zwakke gezondheid van kinderen (zie Tabel 7) cultureel toegeschreven aan het niet naleven van de voorschriften van seksuele onthouding na de geboorte of aan het feit dat de moeder tijdens haar zwangerschap doorging met borstvoeding geven. Er werd algemeen aangenomen dat deze symptomen bij kinderen wezen op misdragingen van de ouders, en de stigmatisering van de ouders leidde ertoe dat ze wachtten met inroepen van medische zorg van zorgprofessionals, die wellicht dezelfde culturele overtuigingen hadden.

Seksuele onthouding bleek dus een dominant traditioneel gebruik te zijn dat niet alleen door de gemeenschap/stamoudsten werd aangenomen, maar ook door de zorgprofessionals in de gemeenschap. Als er geen seksuele onthouding werd betracht of als de moeder zwanger raakte terwijl ze nog borstvoeding gaf, stopte ze vaak abrupt en volledig met het zogen van haar zuigeling om groeiachterstand te voorkomen. Als een kind blij gaf van symptomen van groeiachterstand die werden toegeschreven aan *kubemenda*, probeerden de verzorgers van het kind op verschillende manieren zorg te krijgen, waarbij dan vaak gekozen werd voor zorg door traditionele helers.

Keuzemogelijkheden van de moeder om een gezonde groei bij haar kind te bewerkstelligen In hoofdstuk 7 vindt u de bevindingen met betrekking tot de keuzemogelijkheden (capabilities) van de moeder om een gezonde groei bij haar kind te bewerkstelligen (*onderzoeksvraag 4*). Door middel van het Capability Framework for Child Growth (CFCG) hebben we onderzoek gedaan naar de keuzemogelijkheden van de moeder om een gezonde groei te bewerkstelligen. Het CFCG is een conceptueel kader waarin wordt gepleit voor een benadering van groei van kinderen waarin niet alleen fysieke groei maar ook de sociale, cognitieve en emotionele dimensies van groei als ook de sociaal-culturele achtergrond van het kind worden meegenomen – (*hoofdstuk 7, onderzoeksvraag 4*). Uit de analyse kwamen drie keuzemogelijkheden naar voren die voor een moeder belangrijk zijn om een gezonde groei van haar kind te bewerkstelligen: (1) in staat zijn haar kinderen te voeden, (2) zeggenschap en beslissingsbevoegdheden hebben ten aanzien van landbouwproducten en inkomsten, en (3) toegang te hebben tot medische zorg. Onvoldoende (borst)voeding voor de zuigeling en het kind kwamen vaak voor in onze studie. De mate waarin een moeder in staat was haar kinderen te voeden, werd vaak ondermijnd door overbelasting met werk op het land en huishoudelijke taken, gebrek aan financiële ondersteuning door haar echtgenoot en gebrek aan hulp bij het bieden van directe zorg aan haar jonge kinderen. Bovendien werden de zeggenschap van een vrouw over de landbouwopbrengsten en haar inspraak in huishoudelijke aankopen vaak negatief beïnvloed door beperkende culturele normen, die mannen meer macht gaven dan vrouwen. Moeders merkten regelmatig dat ze geen inspraak hadden in de besteding van het gezinsinkomen en dat ze vaak niet genoeg geld hadden om voedsel te kopen, vervoer te betalen om met hun kinderen naar het ziekenhuis te gaan wanneer

Samenvatting

ze ziek waren, en medische kosten te dekken. Aan de andere kant speelde het sociale netwerk van een moeder een cruciale rol bij de mate waarin ze in staat was haar kinderen te voeden terwijl ze zelf op het land aan het werk was, en bij het verkrijgen van toegang tot medische zorg voor haarzelf en haar kinderen.

Conclusie

Dit etnografische onderzoek biedt belangrijke inzichten in de conceptualisering van groei van kinderen in de context van ruraal Tanzania, en draagt zo bij aan de discussie over wat optimale groei en groeiachterstand is, in Tanzania en daarbuiten. Deze informatie is essentieel voor beleidsmakers en programma makers binnen de volksgezondheid en andere stakeholders die zich bezighouden met het bevorderen van een gezonde groei bij kinderen tot vijf jaar. Het onderzoek heeft met name licht geworpen op (1) de culturele opvattingen en praktijken ten aanzien van groei bij kinderen, en (2) de achtergronden die moeders al dan niet in staat stellen in hun dagelijks leven de gezonde groei bij haar kinderen tot vijf jaar te bevorderen. Onze belangrijkste bevindingen laten zien dat een gezonde groei bij kinderen in de gemeenschap wordt gezien als een multi-dimensioneel verschijnsel, omdat er naast het fysieke aspect andere dimensies mee gemoeid zijn die bovendien cultureel bepaald zijn. Deze multi-dimensionele groei van kinderen wordt bepaald door de praktische keuzemogelijkheden die moeders hebben voor het aanwenden van beschikbare bronnen - waaronder eten - om een gezonde groei bij hun jonge kinderen te bewerkstelligen. Op basis van de belangrijkste bevindingen van ons onderzoek kunnen we concluderen dat de werkelijkheid van groei bij kinderen complex is, en dat een evaluatie van hoe kinderen groeien die complexiteit zou moeten weerspiegelen en daarom contextgebonden informatie moet bevatten waarin zowel culturele indicatoren als antropometrische beoordelingen zijn opgenomen.

Beleidsimplicaties voor Tanzania en daarbuiten

De onderzoeksbevindingen vragen om een paradigmaverschuiving wat betreft Child Growth Monitoring (CGM) naar een multi-dimensionele benadering waarin ook de contextgebonden informatie over een afzonderlijk kind en zijn/haar verzorgers wordt meegenomen. De bevindingen vragen met name om: (1) begeleiding en advies die worden afgestemd op de context, en waarin dus indicatoren uit verschillende dimensies zijn opgenomen, dat wil zeggen indicatoren die cultureel bepaald zijn en indicatoren op het niveau van ouders/huishouden; (2) een uitgebreide aanpak waarin, bij het formuleren van beleid, strategieën en richtlijnen en bij de ontwikkeling en uitvoering van interventies gericht op het bevorderen van voeding van zuigelingen en jonge kinderen en op een gezonde groei en ontwikkeling van kinderen, rekening wordt gehouden met de culturele betekenissen die verzorgers toekennen aan de groei van hun kinderen, en (3) het concept van zeggenschap van moeders toevoegen aan de huidige internationale kaders voor kindervoeding.